

SERVICE MANUAL & PARTS LIST (with price)

SF-8350R (LX-523)

JAN. 1994



SF-8350R

INDEX

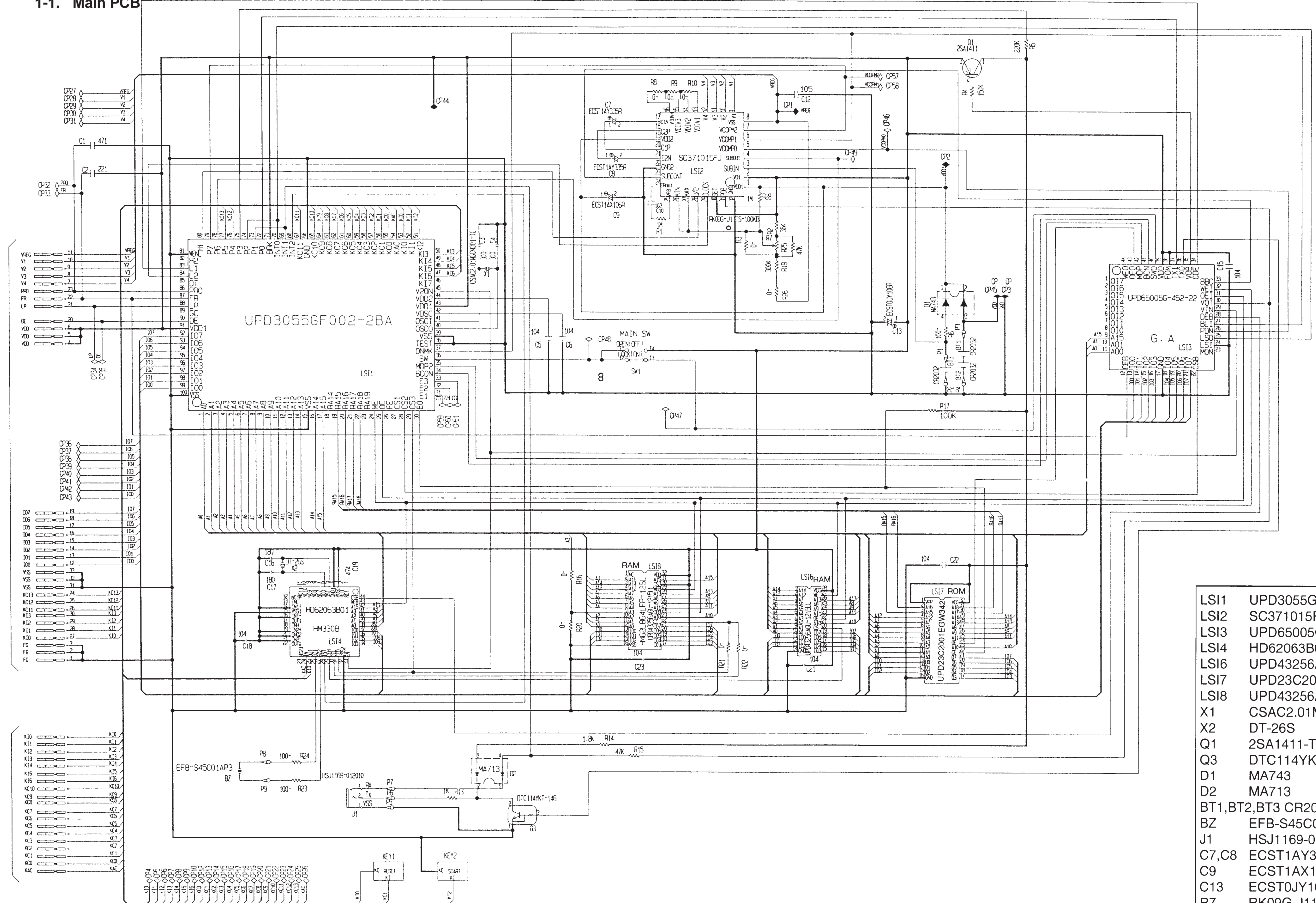
CASIO®

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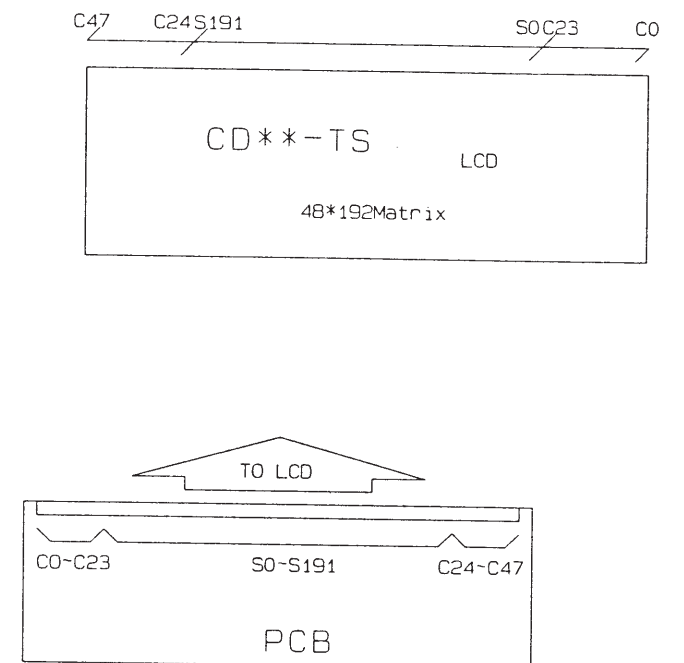
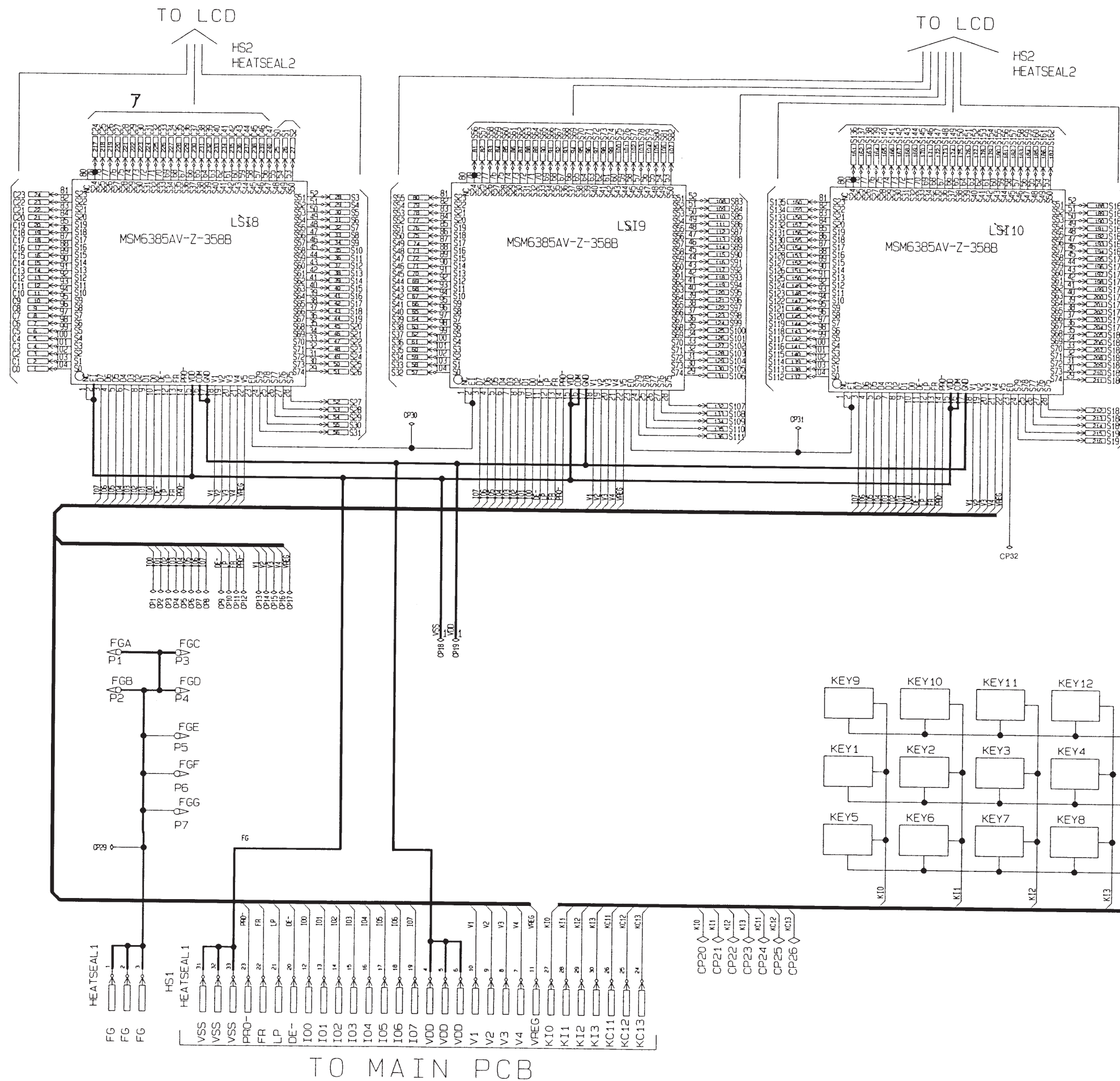
1. SCHEMATIC DIAGRAM

1-1. Main PCB












| | |
|-------------|------------------------|
| LS11 | UPD3055GF002-2BA |
| LS12 | SC371015FU |
| LS13 | UPD65005G-452-22 |
| LS14 | HD62063B01 |
| LS16 | UPD43256AGU-10/12/15LL |
| LS17 | UPD23C2001EGW342 |
| LS18 | UPD43256AGU-10/12/15LL |
| X1 | CSAC2.01MGCM001-TC |
| X2 | DT-26S |
| Q1 | 2SA1411-T1B |
| Q3 | DTC114YKT-146 |
| D1 | MA743 |
| D2 | MA713 |
| BT1,BT2,BT3 | CR2032 |
| BZ | EFB-S45C01AP3 |
| J1 | HSJ1169-012010 |
| C7,C8 | ECST1AY335R |
| C9 | ECST1AX106R |
| C13 | ECST0JY106R |
| R7 | RK09G-J11TS-100KB |

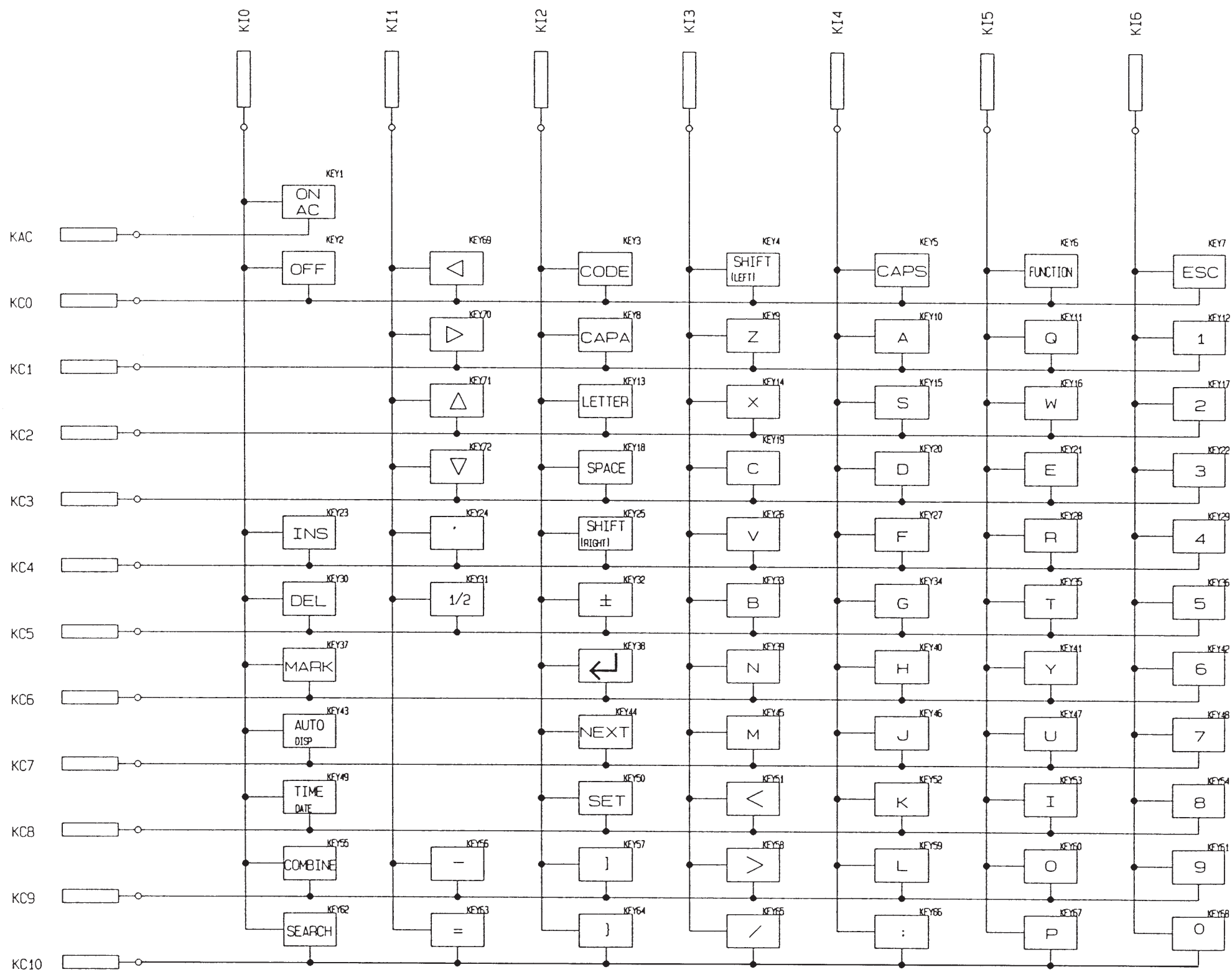
1-2. Display PCB



KEY MATRIX

| | | | | | | |
|-------|---|---|---|--|--|--|
| | Ⓐ LX-523 LX-572 LX-574 | LX-573 | LX-575 | | | |
| KEY1 | DISPLAY CHANGE | 顯示 | DISPLAY CHANGE | | | |
| KEY2 | TEL | 電話 | SPREAD SHEET | | | |
| KEY3 | BUSINESS | 名片 | TEL | | | |
| KEY4 | MEMO | 備忘 | BUSINESS | | | |
| KEY5 | SCHEDULE | 行程 | MEMO | | | |
| KEY6 | CALENDAR | 月曆 | SCHEDULE | | | |
| KEY7 | HOME | 本地時間 | CALENDAR | | | |
| KEY8 | WOELD | 國際時間 | HOME WORLD | | | |
| KEY9 | CAL | 計算 | CAL | | | |
| KEY10 |  |  |  | | | |
| KEY11 |  |  |  | | | |
| KEY12 |  |  |  | | | |

1-3. Key Matrix



2. SPECIFICATIONS

Data storage:

Telephone/business card/memo/schedule data storage/recall, calendar display, marker, phrase memory, secret area, editing, capacity display, auto display

Clock:

Average of accuracy ± 3 seconds per day under normal temperatures; worldtime, schedule alarm, daily alarm

Calculation:

12-digit arithmetic calculations, constants for $+$ $-$ \times \div , independent memory, percentages, square roots, 24-digit approximations, date calculations, other mixed calculations

Messages:

Selectable language: English, German, French, Italian, Spanish, Swedish, Polish, Czech, Hungarian, Russian

General:

Display element: 32-column \times 6-line LCD

Memory capacity: 64 KB (56,006 bytes)

Main component: LSI

Power supply: Main Power Supply — Two CR2032 lithium batteries

Backup Power Supply — One CR2032 lithium battery

Power consumption: 0.05W

Battery life: Main: Approximately 120 hours (Repeated cycle of 1-minute data input into Telephone Directory followed by 10-minute display. Operation temperature of 20°C)
Approximately 150 hours (Continuous display in Telephone Directory. Operation temperature of 20°C)
Backup: 5 years if main batteries are replaced as soon as they become weak.
1 year if dead main batteries are left in the unit.

Auto power off: Approximately 6 minutes after last key operation

Operating temperature: 0°C ~ 40°C (32°F ~ 104°F)

Dimensions: Unfolded: 10.5H \times 152W \times 155.2mmD ($\frac{3}{8}$ "H \times 6"W \times $6\frac{1}{8}$ "D)

Folded: 17.9H \times 152W \times 78mmD ($\frac{3}{4}$ "H \times 6"W \times $3\frac{1}{16}$ "D)

Weight: 152.5g (5.4 oz) including batteries

Current consumption:

| Power switch | TYP. [μ A] | MAX [μ A] |
|----------------|-----------------|----------------|
| OFF | 8 | 29 |
| ON | 1,447 | 13,258 |
| ON (Operating) | 6,707 | 19,958 |

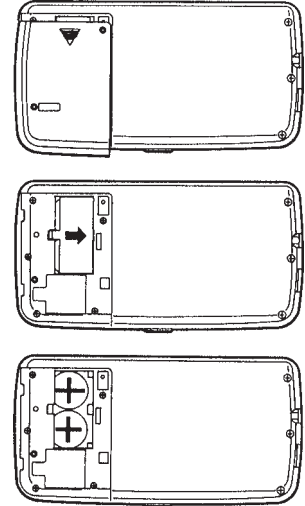
3. TO REPLACE THE BATTERY

A) To replace the main batteries

Before replacing the main batteries, note the following precautions.

- Do not remove the back-up battery from the SF Unit while main batteries are removed.
- Be sure to replace both batteries at the same time, and do not use an old battery with a new one.

1. Remove the screw that hold the battery compartment cover in place.
2. Remove the battery compartment cover by sliding it in the direction indicated by the arrow in the illustration.
3. Slide the main battery holder in the direction indicated by the arrow.
4. Remove both old batteries and replace with two new ones.
 - Use two new batteries. Wipe the surfaces of the batteries with a soft, dry cloth. Make sure that the positive (+) sides of the batteries are facing up (so you can view the positive sides as the batteries lie in the battery compartment).
5. Replace the battery holder.
6. Replace the battery compartment cover and fasten it in place using the screw.

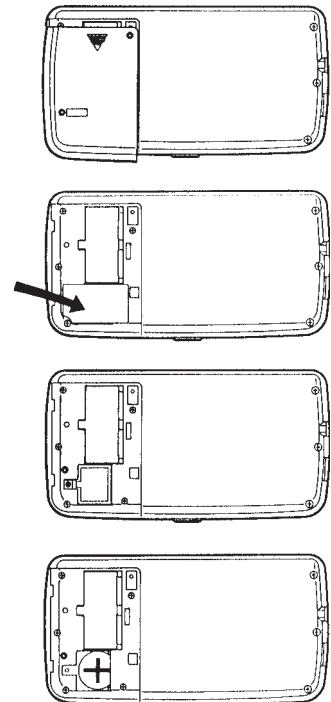


B) To replace the back-up battery

Before replacing the back-up battery, note the following precautions:

- Do not remove the main batteries from the SF Unit while back-up battery is removed.
- Be sure to replace the back-up battery at least once a year.

1. Remove the screw that hold the battery compartment cover in place.
2. Remove the battery compartment cover by sliding it in the direction indicated by the arrow in the illustration.
3. First, remove this sticker from the back-up battery holder.
4. After removing this sticker, take the screw off that secures the back-up battery holder in place, and then remove the battery holder.
5. Remove the old battery and replace it with a new one.
 - Wipe the surfaces of the battery with a soft, dry cloth. Make sure that the positive (+) side of the battery is facing up (so you can view the positive side as the battery lies in the battery compartment.)
6. Replace the back-up battery holder and fasten it in place using the screw, and replace the sticker over the battery holder.
7. Replace the battery compartment cover and fasten it in place using the screw.



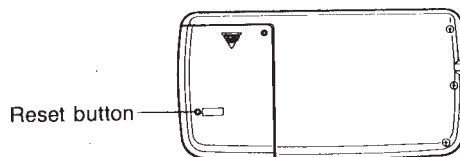
4. ERROR MESSAGE

| Message | Meaning | Action |
|--|---|---|
| DATA ITEM NOT FOUND! | Text specified for search does not exist. | Correct or change specified text. |
| PASSWORD MISMATCH! | Wrong password entered. | Enter correct password. |
| MEMORY FULL! | No more room in memory for storage of data. | Delete unnecessary data items from memory. |
| DATA ERROR! CONSULT YOUR OWNER'S MANUAL UNDER "DATA ERROR" | Abnormal data caused by strong impact, static electricity, etc. | Consult the "DATA ERROR" section on page 3 of owner's manual. |

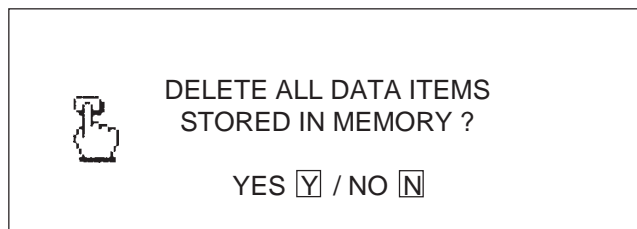
5. TO RESET THE DIGITAL DIARY

Before describing the RESET operation, a note of **WARNING** — *The following procedure will erase all data stored in memory, including marked data items. Be sure to perform the RESET operation only if you wish to clear all data.*

To reset the SF Unit's memory



1. Switch on power and press the RESET button with a thin, pointed object.
The following message appears on the display.



* Important!

Note that the following operation will clear everything stored in the unit's memory. To avoid accidental erasure of important data, be sure to perform this operation only while the system language is set to your native language. See page 2 of owner's manual for information on how to change the system language.

2. Press to reset the SF Unit and clear everything from its memory. To abort the procedure without clearing anything, press .

Following the **RESET** operation, the Home Time Display appears. The initial settings of the SF Unit after reset are shown below.

| | | |
|------------------|------------------|-------|
| HOME TIME: | G.M.T. | |
| | JAN/1/1993 (FRI) | |
| | 12:00 AM | |
| | 12-hour format | |
| WORLD TIME: | New York | |
| Daily Alarm: | 12:00 PM | |
| Sound: | Schedule alarm | → ON |
| | Daily alarm | → OFF |
| | Key | → ON |
| Character input: | CAPS | |
| System Language: | English | |

6. TO SAVE THE DATA TO OTHER MACHINE

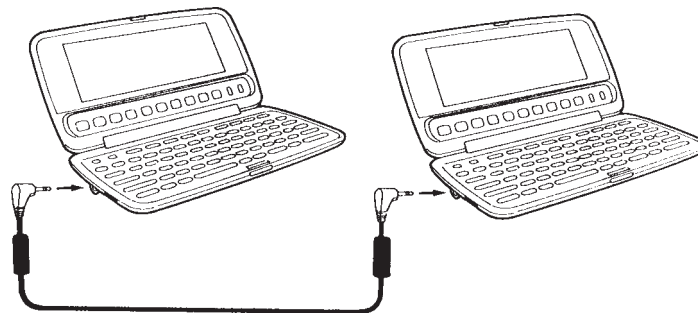
SF-8350R can transfer customers data to other SF-8350R with memory protection only when replacing the LCD or the outer case. How to transfer the data.

* Before connecting the cable (SB-60 or SB-62), be sure to reset the slave machine to clear all data.

Important!

* You can not perform data communications with the CASIO SF-A series of SF Units (SF-A10, etc.).
 * Be sure to replace the connector covers on the SF units when you are not performing data communications.

- 1) Turn off the power switch and connect the two units using the cable (SB-60 or SB-62) as shown in the drawing.







SB-60/SB-62 cable


- 2) Turn on the power switch of each machine.
- 3) The slave machine must be set the date of Feb. 3rd, 1901 into the memory under the calculator mode.

Operation: **ON** **CAL** **1** **9** **0** **1** **TIME** **2** **TIME** **3** **TIME** **M+**
CLEAR/AC DATE DATE DATE

If you don't set the date, the "PASSWORD" isn't transferred to the slave machine.

4) Check the hardware parameters, and if the units have another condition, reset as follows.

To change the hardware parameters, press the , ,  and  cursor keys.

To set the hardware parameters, press the  key.



   

*** HARDWARE PARAMETERS ***

| | | | |
|------------|------|---------------|-------------|
| PARITY | EVEN | ODD | NONE |
| BIT LENGTH | | 7 bits | 8 bits |
| BPS | 1200 | 2400 | 9600 |

TEL


5) Set up the slave machine.

- 1 While in the Calendar Display, Telephone Directory, Business Card Library, Memo Mode, or Schedule Keeper, press the  key followed by  to select "DATA COMMUNICATION", and the following menu appears.

- 1 SEND
- 2 RECEIVE
- 3 PRINT
- 4 HARDWARE PARAMETERS
- 5 DATA TO RAM CARD
- 6 PEN PRINTING

TEL

- 2 Press  to select "RECEIVE" and the following display appears to indicate that the slave machine is ready to receive data.





RECEIVE OK !

TO STOP, PRESS 

TEL

6) Set up the customer's machine.

- 1 While the transmitting unit is in the Calendar Display, Telephone Directory, Business Card Library, Memo Mode, or Schedule Keeper, press the  key followed by  to select "DATA COMMUNICATION", and the following menu appears.

- 1 SEND
- 2 RECEIVE
- 3 PRINT
- 4 HARDWARE PARAMETERS
- 5 DATA TO RAM CARD
- 6 PEN PRINTING

TEL

- 2 Press **[1]** to select "TRANSMIT" and the following menu appears.

[1]


1 ONE DATA ITEM
2 MODE DATA ITEMS
3 ALL DATA ITEMS

— SEND —

TEL

- 3 Press **[3]** to select "ALL DATA ITEMS", and the following display appears to confirm whether you wish to proceed.

[3]


SEND ALL DATA ITEMS ?
YES **[SET]** / NO **[ESC]**

TEL

- 4 Press the **[SET]** key to proceed with the data transmission, or press **[ESC]** if you wish to cancel.

[SET]

NOW SENDING !

TO STOP, PRESS **[ESC]**

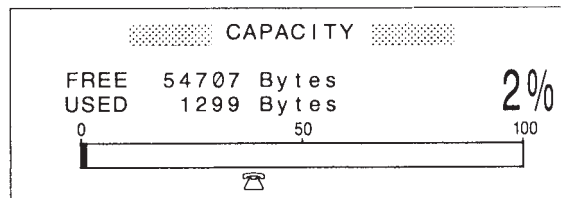
Data are transmitted in the sequence of Telephone Directory data, Business Card Library data, Memo data, Schedule Keeper data and Calendar data.

- * If the customer's machine uses full memory, it takes about one minute and ten seconds for this transferring.
- * The following messages appear on the display of the receiving unit when a problem occurs during data communications. All data transferred up to display of the message is retained in memory, but data communication is terminated.
If one of the following error messages appear, press the **[TEL]**, **[BUSINESS CARD]**, **[MEMO]**, **[SCHEDULE]**, **[HOME TIME]**, **[WORLD TIME]**, **[CAL]**, **[CALENDAR]** key, to clear the error message. Then, take corrective action and try data communication again.

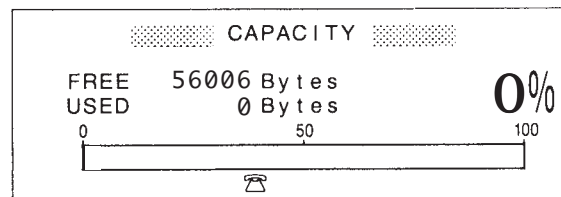
| Message | Cause |
|------------------|--|
| STOPPED ! | <ul style="list-style-type: none"> • [ESC] key pressed on transmitting or receiving unit. • Memory area of receiving unit full. • Battery power drops below a certain level. |
| TRANSMIT ERROR ! | Cable connection broken or abnormal noise in cable. |
| MEMORY FULL ! | Memory area of receiving unit full. |

7. TO CHECK THE MEMORY CAPACITY

The memory Capacity display tells you how much total memory is used for storage of Telephone Directory, Business Card Library, Memo, Calendar, and Schedule Keeper data. It also shows the percentage of total memory used, and how much total memory area remains. Press the **[CAPA]** key to check the current memory capacity.



Following the memory reset operation, the display will appear as follows.

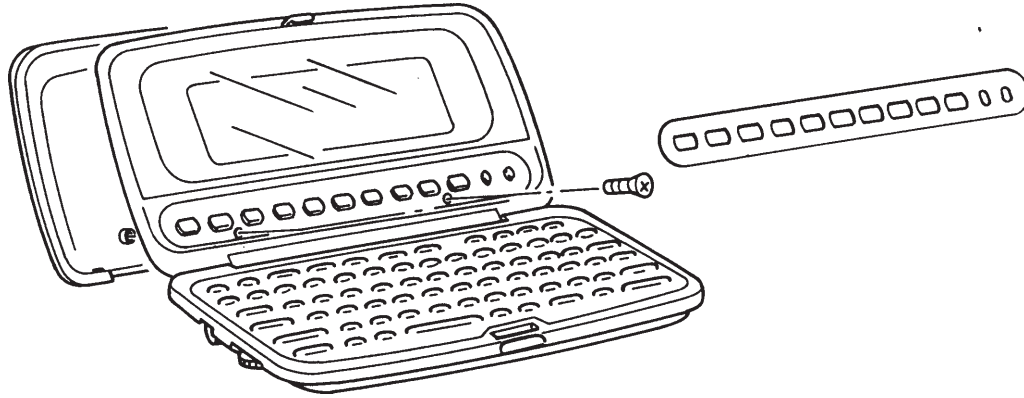


When the percentage of memory used reaches 100%, you will not be able to enter any more data into memory.

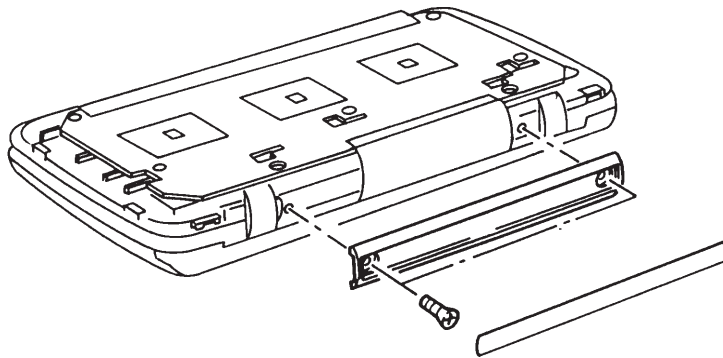
8. DISASSEMBLY (SF-8350R)

1) To open display unit

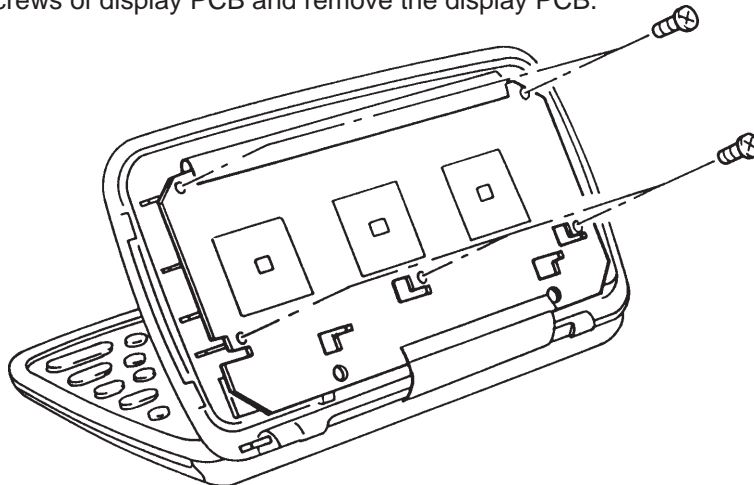
1. Remove the key switch sheet from the display frame with care using a sharp tweezers and remove 2 screws, then remove the display back cover.



2. Remove the blind plate of hinge and then release the 2 screws of hinge cover.

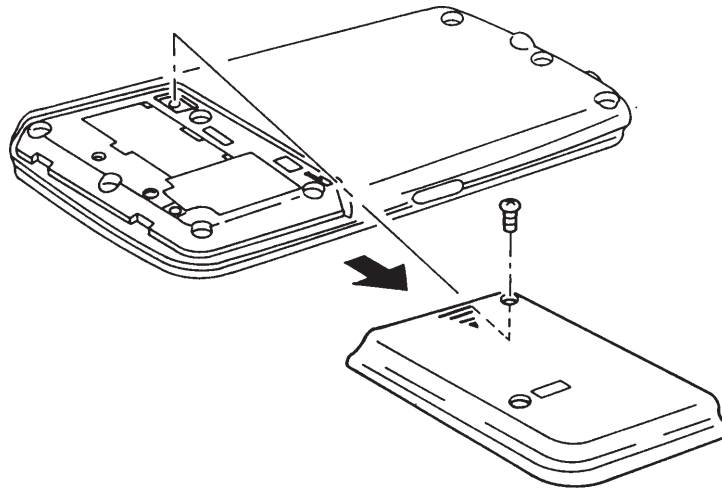


3. Release the 5 screws of display PCB and remove the display PCB.



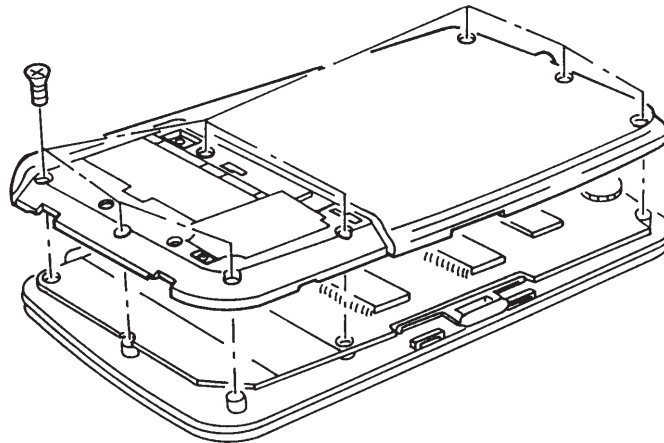
2) To open battery cover and back cover

1. Release the one screw of battery cover and remove the battery cover.

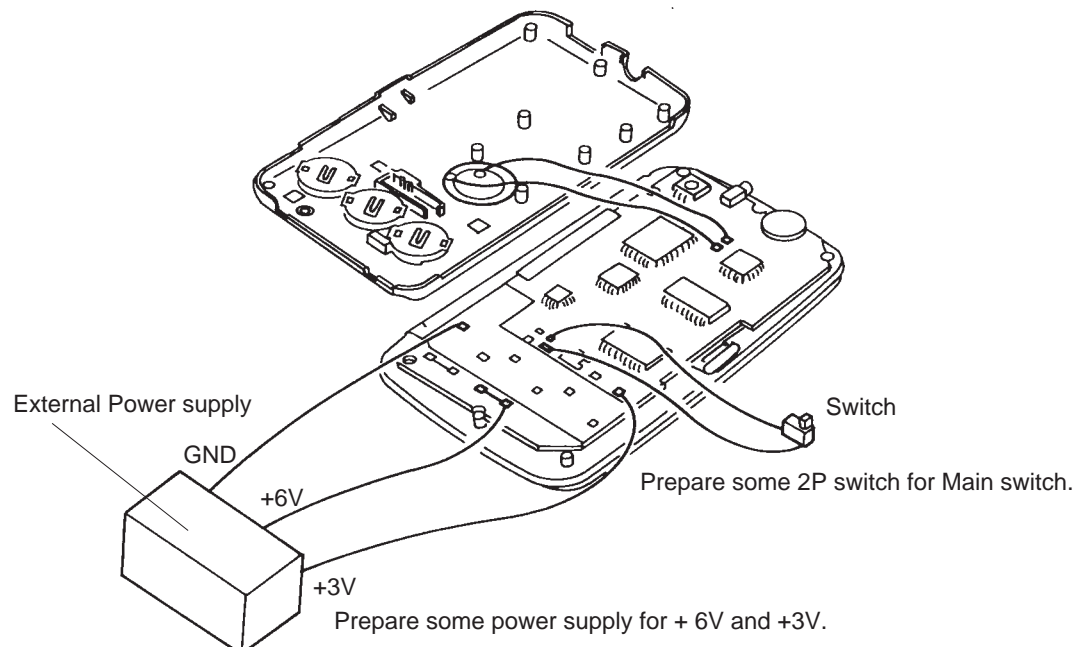


2. Remove the batteries. (Refer section 3 in this manual.)

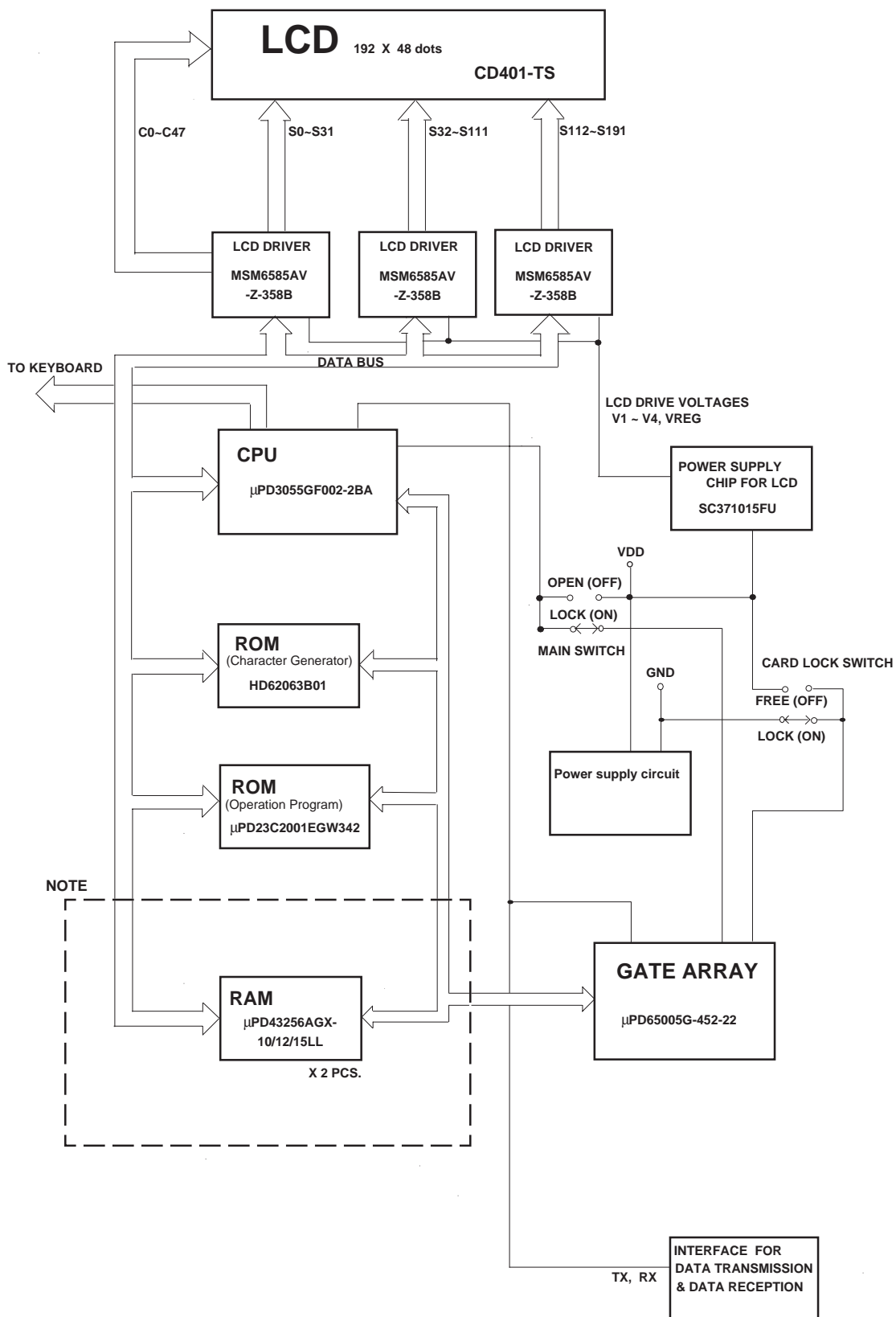
3. Release the 8 screws of the back cover. Then, remove the back cover.



4. To check the circuit by oscilloscope, apply the power to main PCB as follow:



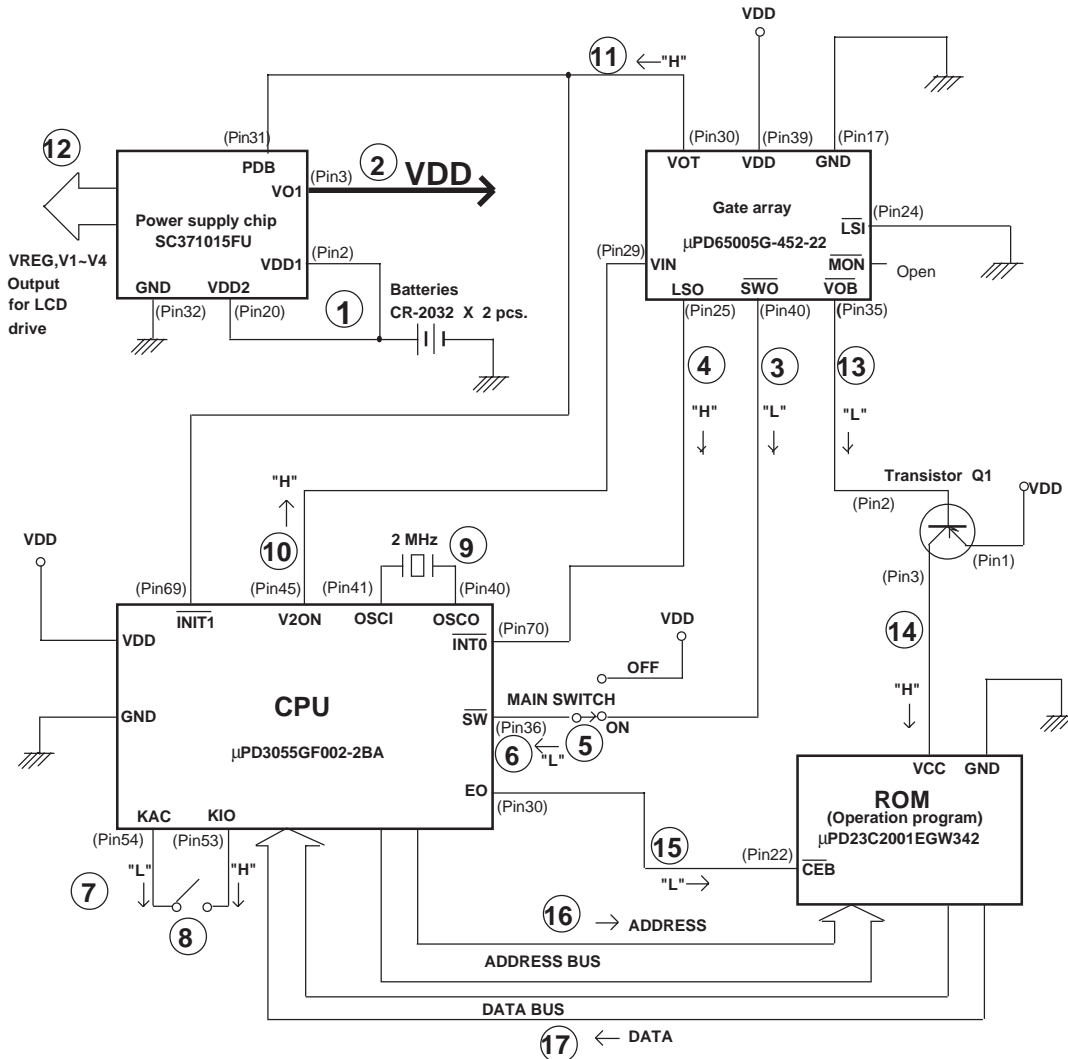
9. BLOCK DIAGRAM



10. CIRCUIT EXPLANATIONS

10-1. System chart

Generally, SF-8350R is working with the following steps.

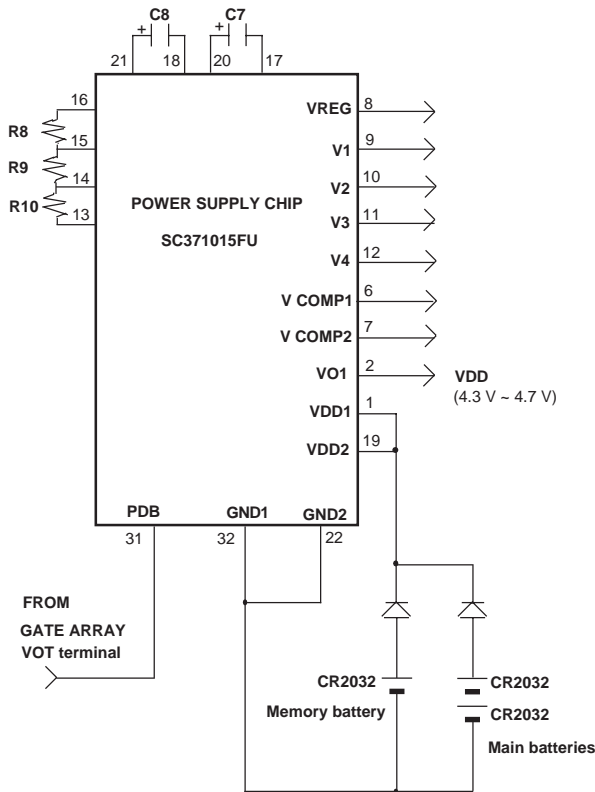


1. Supply 6V to VDD1 and VDD2.
2. Output VDD (4.5V).
3. Output "L" from $\overline{\text{SWO}}$ terminal.
4. Output "H" from LSO terminal.
5. Main switch ON.
6. Input "L" to $\overline{\text{SW}}$ terminal.
7. Output "L" from KAC terminal.
8. Push power on button switch.

9. CPU oscillation is generated.
10. Output "H" from V2ON terminal.
11. Output "H" from VOT terminal.
12. Output all LCD drive voltages.
13. Output "L" from $\overline{\text{VOB}}$ terminal.
14. Apply VDD to ROM.
15. CPU sends ROM chip enable signal from EO terminal.
16. CPU sends address to ROM.
17. CPU receives data from ROM.

10-2. Power supply circuit

1) Power supply chip SC371015FU



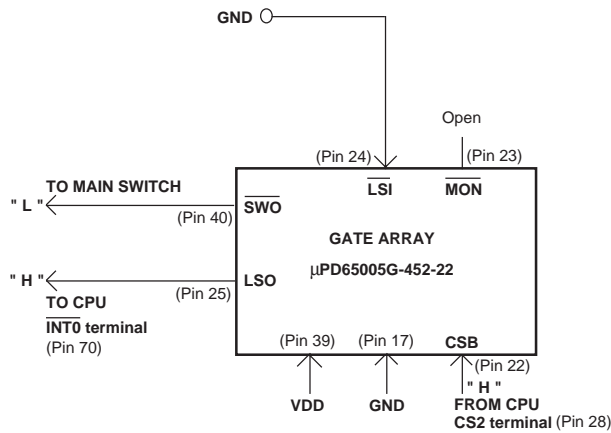
The IC SC371015FU is power supply chip for SF-8350. When IC SC371015FU receives a Voltage 6V (CR-2032 \times 2 pcs.) at the terminal VDD1(Pin No.2), the regulated voltage VDD (4.3~4.7V) will be applied to the VDD lines. The outputs Vss (VREG) and V1~V4 are the LCD drive voltages. When the terminal PDB becomes "H", those voltages are generated by IC SC371015FU and capacitors C7 and C8 (ESCT1AY335R) and applied to LCD driver IC MSM6385AV-Z-358B. The resistors R8~R10 are used for dividing voltage V1~V4.

| LCD DRIVE VOLTAGE | Value (Approx.) [V] | |
|-------------------|---------------------|-----------------|
| | Contrust : Min. | Contrust : Max. |
| VSS(VREG) | -3.5 | -6.4 |
| V1 | +3.4 | +3.1 |
| V2 | +2.5 | +1.7 |
| V3 | -1.5 | -3.6 |
| V4 | -2.5 | -4.9 |

The V comp1 and V comp2 outputs are the battery voltage detection outputs. According to VDD1 and VDD2 voltages, V comp1 and V comp2 will change the status as follows:

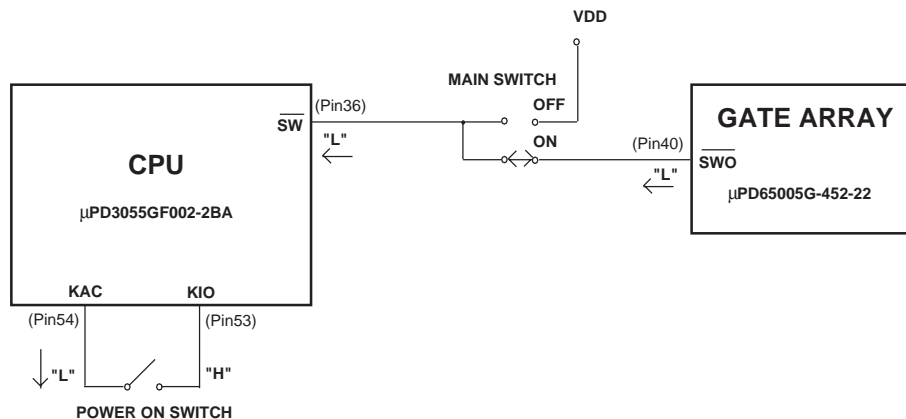
| OUTPUTS | STATUS " H " | STATUS " L " |
|----------|--|--|
| V COMP 1 | When the batteries voltage is more than 4.7 V. | When the batteries voltage is less than 4.6 V. |
| V COMP 2 | When the batteries voltage is more than 4.5 V. | When the batteries voltage is less than 4.4 V. |

2) Gate array



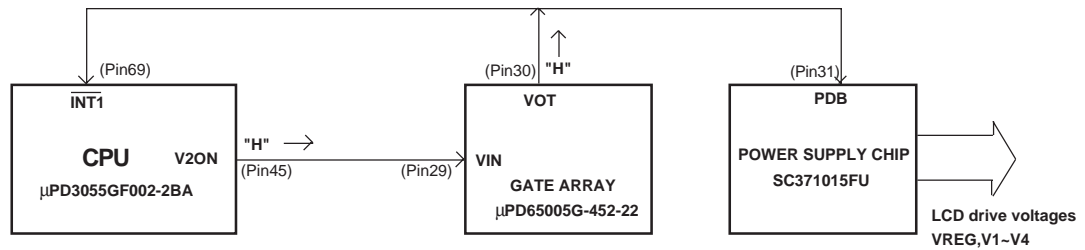
When VDD is applied from power supply IC SC371015FU to gate array uPD65005G-452-22, gate array will send "L" signal to activate the main switch signal from terminal $\overline{\text{SWO}}$. Also, gate array will send "H" signal to release the $\overline{\text{INT0}}$ terminal of CPU from LSO terminal. The terminal CSB is for the chip select of gate array. This signal is sent from CPU terminal CS2. And when the VDD is applied to CPU, CPU will send "H" signal to CSB terminal.

3) Main switch and power on switch



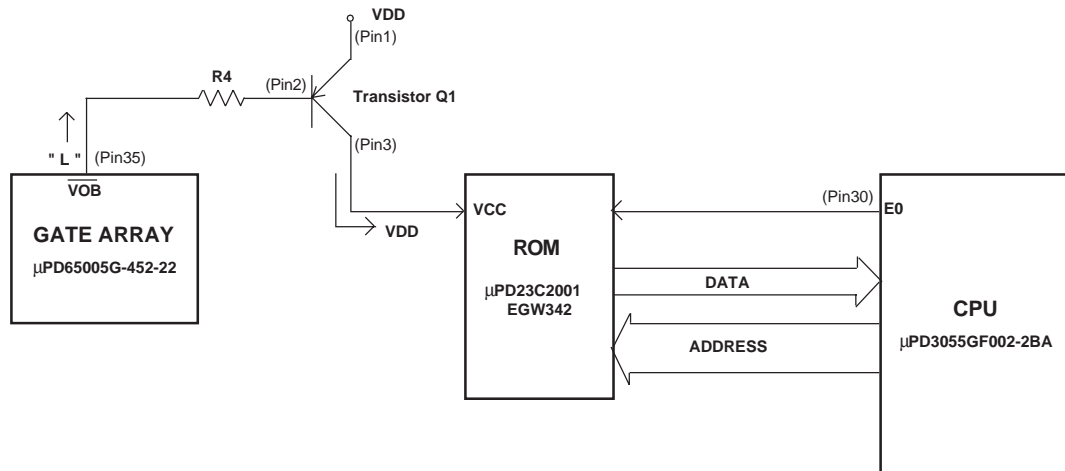
When the main switch is set to on position, $\overline{\text{SW}}$ terminal of CPU becomes "L", then CPU will send "L" signal to KAC terminal to enable the system power on. The KIO terminal is "H" when VDD is applied to CPU. Therefore, when pressing the power on switch, CPU will generate a clock pulse (2 MHz) for start up the system.

4) Power supply for LCD



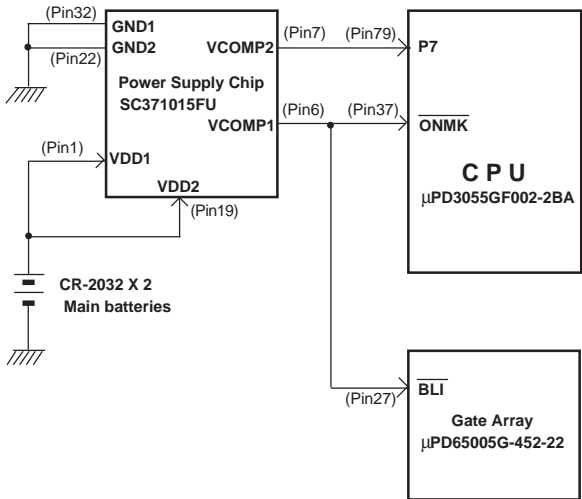
When the system starts up, the CPU will send "H" signal to the VIN terminal of the gate array from the V2ON terminal. Then, the gate array will send "H" signal from the VOT terminal to release the interruption signal $\overline{\text{INT1}}$ of the CPU and also, it will be sent to the PDB terminal of the power supply chip to generate LCD drive voltages VREG, V1-V4.

5) ROM driving transistor



After the gate array sends the VOT signal, the gate array sends "L" signal from the $\overline{\text{VOB}}$ terminal to the base terminal of transistor Q1. Then, the VDD is applied to the ROM (operation program), and the CPU can read a ROM program data by the E0 signal.

10-3. Battery voltage detection



The power supply IC chip SC371015FU has two kind voltage detection circuit in it. According to the batteries input voltage, the detection outputs V comp1 and V comp2 will change the status as follow:

VCOMP2

| Batteries Voltage | VCOMP2 |
|----------------------|--------|
| More than about 4.6V | "H" |
| Less than about 4.6V | "L" |

VCOMP1

| Batteries Voltage | VCOMP1 |
|----------------------|--------|
| More than about 4.4V | "H" |
| Less than about 4.4V | "L" |

When CPU receive VCOMP2 detection signal, the machine shows "MAIN POWER SUPPLY BATTERIES GETTING WEAK! REPLACE!" on the display. And when the batteries voltage is weak more (approx. 4.53V), as the VCOMP1 detection signal becomes "L". The machine will operate an auto power off operation.

10-4. CPU pin description (μPD3055GF002-2BA)

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|------------|----------|--------|---------------|--------------|---|
| 1~14,16,17 | A0~A15 | Out | L | Pulse | Address Bus line |
| 15,39,100 | VSS | In | GND | GND | GND terminal |
| 24 | WE | Out | H | Pulse | Write signal |
| 25 | OE | Out | H | Pulse | Read signal |
| 26 | FE | Out | H | Pulse | Not used |
| 27 | CS1 | Out | H | H | Not used |
| 28 | CS2 | Out | H | H | Chip select signal for gate array |
| 29 | CS3 | Out | H | Pulse | Chip select signal for ROM (Character generator) |
| 30 | E0 | Out | L | Pulse | Chip enable signal for ROM (Operation program) |
| 31 | E1 | Out | L | H | Chip enable signal |
| 32 | E2 | Out | L | H | Chip enable signal |
| 33 | E3 | Out | L | H | Chip enable signal |
| 34 | BCON | Out | H | H | BCN signal to gate array |
| 35 | MDP2 | Out | H | L | MDP signal to gate array |
| 36 | SW | In | L | L | Switch signal (When switches are at ON position.) |
| 37 | ONMK | In | H | H | Battery detection V comp1 input |
| 38 | TEST | In | L | L | TEST terminal (connect to GND) |
| 40,41 | OSC O/I | In | L | Pulse | Clock input |
| 42 | VOSC | In | L | H | Power input for Clock |
| 43,91 | VDD1 | In | H | H | VDD input terminal |
| 44 | VDD2 | In | H | H | VDD input terminal |
| 45 | V2ON | Out | L | H | Power on output signal |
| 46~53 | KI7~KI0 | In | H | H | Key input signal (KI7---Not used) |
| 54 | KAC | Out | L | Pulse | Power on switch signal output |
| 55~65,67 | KC0~KC11 | Out | H | Pulse | Key common signal output |
| 66 | GND | In | L | L | GND terminal |
| 68 | INT2 | In | H | H | Interrupt signal from ROM (Character generator) |
| 69 | INT1 | In | L | H | Interrupt signal from gate array |
| 70 | INT0 | In | H | H | Interrupt signal from gate array |
| 71 | BRK | In | H | H | VDD input terminal |
| 72 | P0 | Out | H | H | Transmission data output |
| 73 | P1 | In | L | H | Reception data input |
| 74 | P2 | In | H | H | Card lock switch input |
| 75 | P3 | In | L | H | IC card detection signal input |
| 76 | P4 | Out | H | Pulse | KC12 key common signal output |
| 77 | P5 | Out | H | Pulse | KC13 Key common signal output |
| 78 | P6 | In | H | H | Memory back-up battery detection input |
| 79 | P7 | In | H | H | Battery detection V comp2 input |
| 80 | H1 | Out | H | H | Display contrast control signal output (Up/Down) |
| 81 | WENL | In | L | L | GND terminal |
| 82 | H2 | Out | H | H | Not used |
| 83 | L1 | Out | L | H | Chip enable signal for gate array |
| 84 | L2 | Out | L | L | Display contrast control clock signal |
| 85 | DT | Out | H | Pulse | Not used |
| 86 | PRO | Out | L | H | LCD driver mode selection signal |
| 87 | FR | Out | L | Pulse | LCD driver synchronous signal |
| 88 | LP | Out | H | Pulse | LCD driver latch pulse signal |
| 89 | GC | Out | H | Pulse | Not used |
| 90 | DE | Out | H | Pulse | LCD driver data latch clock signal |
| 92~99 | IO7~IO0 | In/Out | L | Pulse | Data bus line |
| 18~23 | RA14~19 | Out | L | Pulse | Address line (Used only RA15,16) |

10-5. Gate array pin descriptions (μPD65005G-452-22)

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|-------------|---------|--------|---------------|--------------|--|
| 1~8 | OI7~OI0 | In/Out | L | L | Not used |
| 9 | A15 | In | L | Pulse | Address input |
| 10,11 | A01,A00 | In | L | Pulse | A1,A0 address input |
| 12 | CEB | In | L | Pulse | Decode signal for data access |
| 13~16,18~21 | IO0~IO7 | In/Out | L | Pulse | Data bus line |
| 17 | GND | In | L | L | GND terminal |
| 22 | CSB | In | H | Pulse | Chip select signal from CPU |
| 23 | MON | Out | L | L | Not used |
| 24 | LSI | In | L | L | Connected to GND |
| 25 | LSO | Out | H | H | Card lock switch detection output |
| 26 | PDN | In | H | H | Power down detection input |
| 27 | BLI | In | H | H | Battery detection V comp1 input |
| 28 | DEB | Out | H | Pulse | Chip selection signal for ROM(Character generator) |
| 29 | VIN | In | L | H | Power on signal input |
| 30 | VOT | Out | L | H | Power on signal output |
| 31 | OEI | In | H | Pulse | Read signal input |
| 32 | WEI | In | H | Pulse | Write signal input |
| 33 | BBC | Out | L | Pulse | Memory back-up battery scanning signal |
| 34 | CDE | In | L | H | IC card detection signal input |
| 35 | VOB | Out | H | L | ROM power switching signal (Operation program) |
| 36 | TXO | Out | H | H | Transmission data output |
| 37 | TXI | In | H | H | Reception data input |
| 38 | FOM | In | H | H | VDD terminal |
| 39 | VDD | In | H | H | VDD terminal |
| 40 | SWO | Out | L | L | Main switch control signal |
| 41 | BCN | In | H | H | BCON signal from CPU |
| 42 | MDP | In | H | L | MDP2 signal from CPU |
| 43 | OEO | Out | L | Pulse | Read signal for IC card (Not used) |
| 44 | WEO | Out | L | Pulse | Write signal for IC card (Not used) |

10-6. Power supply chip IC pin descriptions (SC371015FU)

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|---------|----------|--------|---------------|--------------|---|
| 32,22 | GND1,2 | In | L | L | GND terminal |
| 1,19 | VDD1,2 | In | H | H | Main battery positive terminal (+6V) |
| 2 | VO1 | Out | H | H | VDD output terminal (4.5V) |
| 31 | PDB | In | L | H | Power on switch signal from gate array |
| 6 | V COMP1 | Out | H | H | Battery detection signal (less than 4.6V---"L") |
| 7 | V COMP2 | Out | H | H | Battery detection signal (less than 4.4V---"L") |
| 8 | VSS | Out | L | *-5V | LCD drive power V REG |
| 9 | V1 | Out | L | *3.25V | LCD drive power V1 |
| 10 | V2 | Out | L | *1.95V | LCD drive power V2 |
| 11 | V3 | Out | L | *-2.5V | LCD drive power V3 |
| 12 | V4 | Out | L | *-3.75V | LCD drive power V4 |
| 13~16 | VD/V1~4 | ** | H | ** | Voltage dividing terminal for LCD drive power |
| 17 | C1N | ** | GND | -5V | Negative terminal for doubler capacitor C7 |
| 18 | C2P | ** | 3V | GND | Positive terminal for doubler capacitor C8 |
| 20 | C1P | ** | 3V | -2.2V | Positive terminal for doubler capacitor C7 |
| 21 | C2N | ** | GND | -2.2V | Negative terminal for doubler capacitor C8 |
| 23 | SUB CONT | In | L | ** | |

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|---------|-------|--------|---------------|--------------|---|
| 24 | EROUT | Out | 6V | 5V | VFB capacitor terminal |
| 25 | VFB | ** | H | 3.2V | EROUT signal input |
| 26 | MIN | ** | 5V | 3.2V | |
| 27 | MAX | ** | 5V | 3.2V | |
| 28 | U/D | In | H | 5V | Display contrast control signal (Up/Down) |
| 29 | CLOCK | In | L | L | Display contrast clock signal |
| 30 | SET | In | H | H | Display contrast data reset signal |
| 31 | PDB | In | L | H | |

10-7.Character generator ROM pin descriptions (HD62063B01)

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|-----------|-----------|--------|---------------|--------------|--|
| 1,7~12,23 | NC | ** | L | L | Not used |
| 2 | BLD | In | L | L | Not used (Battery voltage detection terminal) |
| 3 | VOSC | In | 3V | 3V | Connected capacitor |
| 4,20 | GND | Power | H | H | VDD terminal |
| 5,6 | OSI/OSO | In | Pulse | Pulse | External clock terminal (32.768 KHz) |
| 13 | TNL | Out | H | H | Not used |
| 14,19 | IN1+,IN2+ | In | H | H | Connected to VDD |
| 15,32 | VSS1,VSS2 | Power | L | L | GND terminal |
| 16,21 | IN1-,IN2- | In | H | H | Connected to VDD |
| 17,22 | OUT1,OUT2 | Out | H | H | Not used |
| 18 | TNH | Out | H | H | Not used |
| 24 | IN | In | L | Pulse | Power on key input terminal |
| 25 | OUT | Out | H | Pulse | KI0 terminal for power on |
| 26,27 | BZ1,2 | Out | L | L | Buzzer signal |
| 28 | INT | Out | H | H | Interrupt signal for alarm clock (alarm time----"L") |
| 29,30 | CEH,CEL | Out | H | Pulse | RAM chip select signal |
| 31 | CED | In | H | Pulse | Chip enable signal of CPU |
| 33 | EN | In | L | H | Enable signal (Buzzer off-----"L") |
| 34~37 | IO3~IO0 | In/Out | L | Pulse | Data bus line (IO0~IO3) |
| 38~42 | A0~A3,A15 | In | L | Pulse | Address bus line (A0~A3,A15) |
| 43 | WEB | In | H | Pulse | Write signal |
| 44 | CSB | In | H | Pulse | Chip select signal |

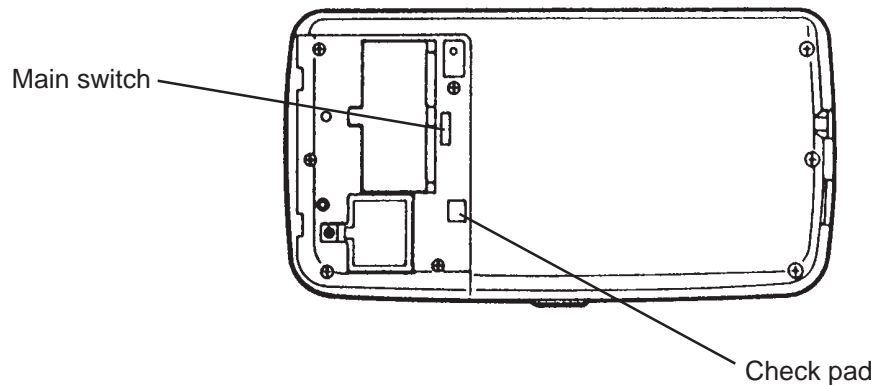
10-8. Operation program ROM pin descriptions (μPD23C2001EGW342)

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|-----------------|-----------------|--------|---------------|--------------|-------------------------------------|
| 1,30,31 | NC | - | L | +5V | Connected to VCC |
| 2~12, 23, 25~29 | A0~A16 | In | L | Pulse | Address bus line (A0~A14,RA15,RA16) |
| 13~15, 17~21 | IO0~IO7 | Out | L | Pulse | Data bus line (IO0~IO7) |
| 16 | GND | Power | GND | GND | GND terminal |
| 22 | \overline{CE} | In | L | Pulse | Chip selection terminal |
| 24 | OE | In | L | Pulse | Output enable terminal |
| 32 | VCC | Power | L | +5V | VCC terminal |

10-9. RAM pin descriptions (μPD43256AGU-10/12/15LL)

| Pin No. | Name | In/Out | Status of OFF | Status of ON | Description |
|---------------------|--------|--------|---------------|--------------|---------------------------|
| 2, 4~6, 9~13, 15~18 | A0~A14 | In | L | Pulse | Address bus line (A0~A14) |
| 21~23, 25~29 | D1~D8 | In/Out | L | Pulse | Data bus line (IO0~IO7) |
| 24 | GND | In | L | L | GND terminal |
| 31 | CSB | In | H | Pulse | Chip select signal |
| 1 | OEB | In | H | Pulse | Read signal from CPU |
| 7 | WEB | In | H | Pulse | Write signal from CPU |
| 8 | VCC | In | H | H | VDD terminal |

11. DIAGNOSTIC OPERATION



| | |
|-------------|-----------|
| SELECT MENU | 1 DISPLAY |
| | 2 MEMORY |
| | 3 KEY |
| | 4 BUZZER |
| | 5 I/F |

1. Diagnostic mode

The diagnostic mode appears when main switch is turned on while there is a short in the checkpad. After this operation, the machine will beep and display "SELF-TEST".

The menu appears after press SET key. Tests are conducted by selecting the mode from the list on screen. The each test can be selected by the following function keys.

| | |
|-------------------|---------------------------------------|
| TEL key | : Test the LCD display |
| Business card key | : Test the IC memory chip and the RTC |
| MEMO key | : Test all keys |
| SCHEDULE key | : Buzzer test |
| CALENDAR key | : SB-60/SB-62cable interface |

| | |
|---------|-----------|
| DISPLAY | 1 WHITE |
| | 2 BLACK |
| | 3 CHECKER |
| | 4 REVERSE |
| | 5 FRAME |

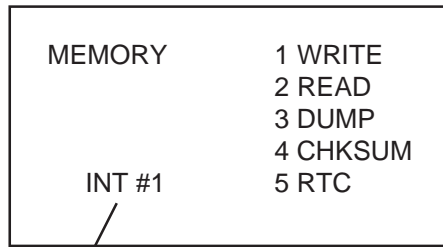
2. Display check

DISP CHNG key : Return to menu display

| | |
|-------------------|---|
| TEL key | : Lights on dot at corners |
| Business card key | : Lights on in all dots(black screen) |
| MEMO key | : Checker display |
| SCHEDULE key | : Reverse checker display |
| CALENDAR key | : Lights on dot along the screen edge (frame) |

3. ROM/RAM check

DISP CHNG key :Return to menu



INT---Internal RAM
EXT--External RAM(RAM card)
#1---Test data pattern(00,01,02...)
#2---Test data pattern(FF,FE,FD....)

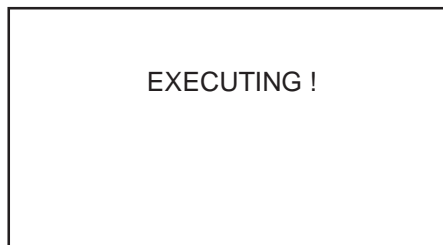
TEL key :Write the set pattern to the selected RAM area
Business card key :Compare the pattern displayed after # with the write data of RAM and displays the results.
MEMO key :Dump contents of memory. (direction depends on setting of internal/external switch)
SCHEDULE key :Call up checksum and XOR values for connected ROM/RAM data.
CALENDAR key :Bring up clock display. The present time, data and daily alarm can be set.

NOTE 1. To change the RAM internal or extenal, press WORLD TIME key. As SF-8350 has no RAM card interface, Test only Internal RAM area.

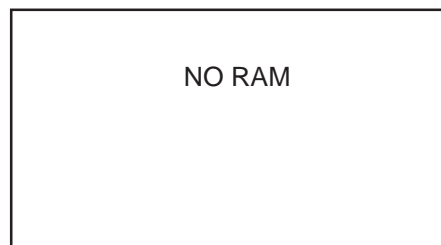
NOTE 2. To change the test data pattern,
press HOME TIME key for data pattern 1 (00,01,02,03,.....FF,00,01,02,03,.....).
press WORLD TIME key for data pattern 2 (FF,FE,FD,.....00,FF,FE,FD,.....).

1) RAM write

The following message will be displayed while writing the data to RAM.



When there is no RAM to write a data, the following message will be displayed.



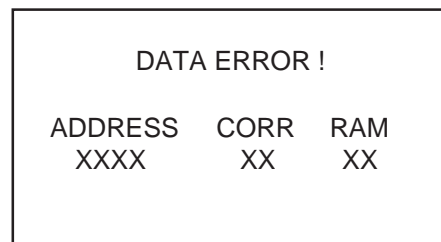
To release this message, press DISP CHNG key.

2) RAM read

Normal end display is;



Error end display is;



To release this message, press DISP CHNG key.

3) Memory dump

| MEMORY DUMP | | | | | | | | | | | | | | | |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |
| XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |
| XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |
| XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX | XX |

When memory dump is operated by pressing MEMO button, a display will appear as shown at left. The first two lines, beginning from the top left, signify the following address values in reference to the one megabyte "E0" area:

00001,00002,00004,.....,00080,00100,00200

00400,00800,01000,.....,20000,40000,80000

The lower two lines refer to the data in the "E1" area.

Note : The Internal/External switch is activated pressing CAL button. SF8350 has no external RAM area.

4) CHECK SUM

| | TYPE | SIZE | CHECK-SUM | XOR |
|----|------|-------|-----------|-----|
| E0 | ROM | 128KB | DB98 | 4F |
| CE | RAM | 64KB | 8300 | 00 |

Type : ROM and RAM are shown.
However, if the ROM is not in standard Casio format, a format error will be displayed.

Size : Memory capacity (total)

Checksum:

XOR : Logic operation for all data.

The ON key is the only key that remains functional when an error has occurred or check-sum is being displayed.

5) RTC

| TIME DISPLAY | | | | | | | | | | | | | | | |
|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| yyymmddhhmmss..... | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| 1990 04 04 12 34 56 | | | | | | | | | | | | | | | |

Input can be made in the second and third lines using the numeric keys. Entry of 12 or more digits sets the time and date. Entry of 4 or 6 digits sets the daily alarm. The ON key clears current entries.

4. Key check

| KEY | | | | | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 1 RANDOM | | | | | | | | | | | | | | | |
| 2 AUTO | | | | | | | | | | | | | | | |

TEL Key :

The 'key code' will be displayed.

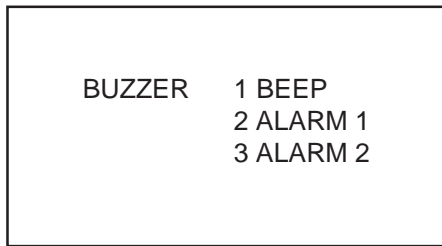
The 'key code' is numbered incrementally from left to right with the DISPLAY CHANGE key as "00", and TEL key as "01" etc. Accordingly, the SET keys is "81". To release this test, press SEARCH key.

Business card key :

Limits the mode mentioned above so that the keys must be pressed in order according to the key code. If an error is made a buzzer sounds for about 1 second. (A correct entry results in a beep tone)

In either mode a press of the SEARCH key will return the screen to the menu mode.

5. Buzzer check

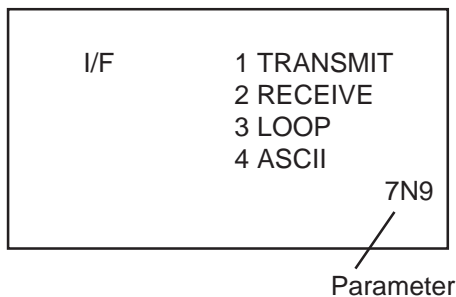


TEL key : Key input sound every 1 second
Business card key : Sound alarm 1
MEMO key : Sound alarm 2



Sound can be stopped by pressing the any key.
While an alarm is sounding the screen display is as shown at left. If an irregularity is found in voltage of battery while the alarm is sounding, the alarm will stop. After 256 seconds, the alarm will stop automatically.

6. SB-60/SB-62 cable interface check



The TEL to SCHEDULE keys are used to select mode; the CALENDAR, HOME TIME and WORLD TIME key are used to set the transmission parameters. The three characters that appear on the right side at display represent the parameter. In the case of the example display, it indicates 7 BIT, NON PARITY, 9600 BPS. The operation continues until stopped by pressing the ESC key and then pressing the ON key for all modes.



DISP CHNG key : Return to menu mode
TEL key : Transmission mode. The data of transmission is "H" and it is sent out by the data of &H34 and &H38 by the Xon/Xoff control.
Business card key : Reception mode. Make sure to set the parameter to match that of the transmitting side. The data received appears on the display.
MEMO key : Loop back test. Short the Tx and Rx terminals for this test. Transmit and check from &H20 to &H7E. When complete, the message 'CHECK COMPLETE' is displayed.
SCHEDULE key : output the following ASCII code by Xon/Xoff control.
 !"#*+,-/0123456789:
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 A line end code is added with each line.

CALENDAR key : Switch the data length 7 bit(7) or 8 bit(8)

HOME TIME key : Switch the parity bit : NON(N)—EVEN(E) —NON(N) —ODD(O)

WORLD TIME key : Switch the transmission speed : 9600(9)—4800(4)—2400(2)—1200(1)

To communicate two machines, please set the transmission machine before setting the receiving unit. To release communication, press ESC button. In this case, the break code is sent to receive units. Therefore, both machines display "TRNS BREAK !" and communication will be stopped. Also, if the error is occurred, both machines display "TRNS ERROR !" and communication will be stopped.

NOTE : As diagnostic program area does not have all ASCII code, to display a reception data, some character will be changed to other character. For example, a capital letter will be changed to small letter.

Break display (Broken transmission)

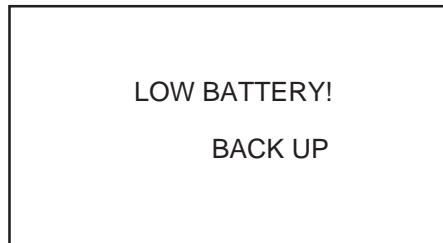


Error display



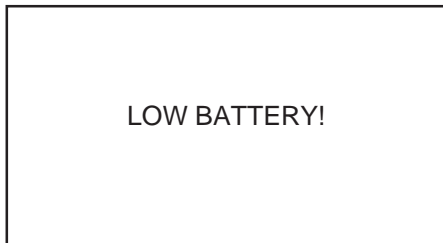
7. Battery level check

Memory back up battery



The memory back up voltage detector detects any irregularity in voltage, the machine goes into an error state and the display is as shown at left figure. To release this display, press any key.

Main battery



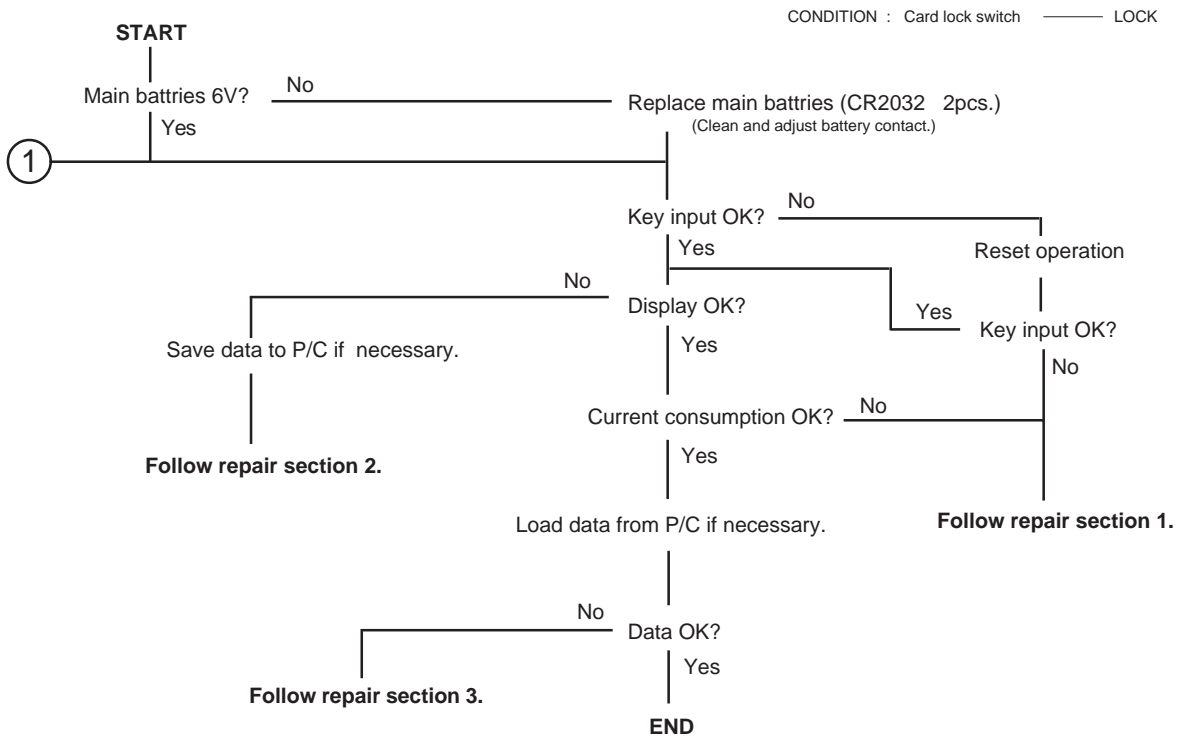
When the main battery voltage detector detects low battery condition while display is on, the machine shows the message as shown at left figure. When this message is displayed, only ON/OFF key are possible to operate. And if the voltage becomes lower than 4.4V, the display will be off mode (auto power off mode).

8. Others

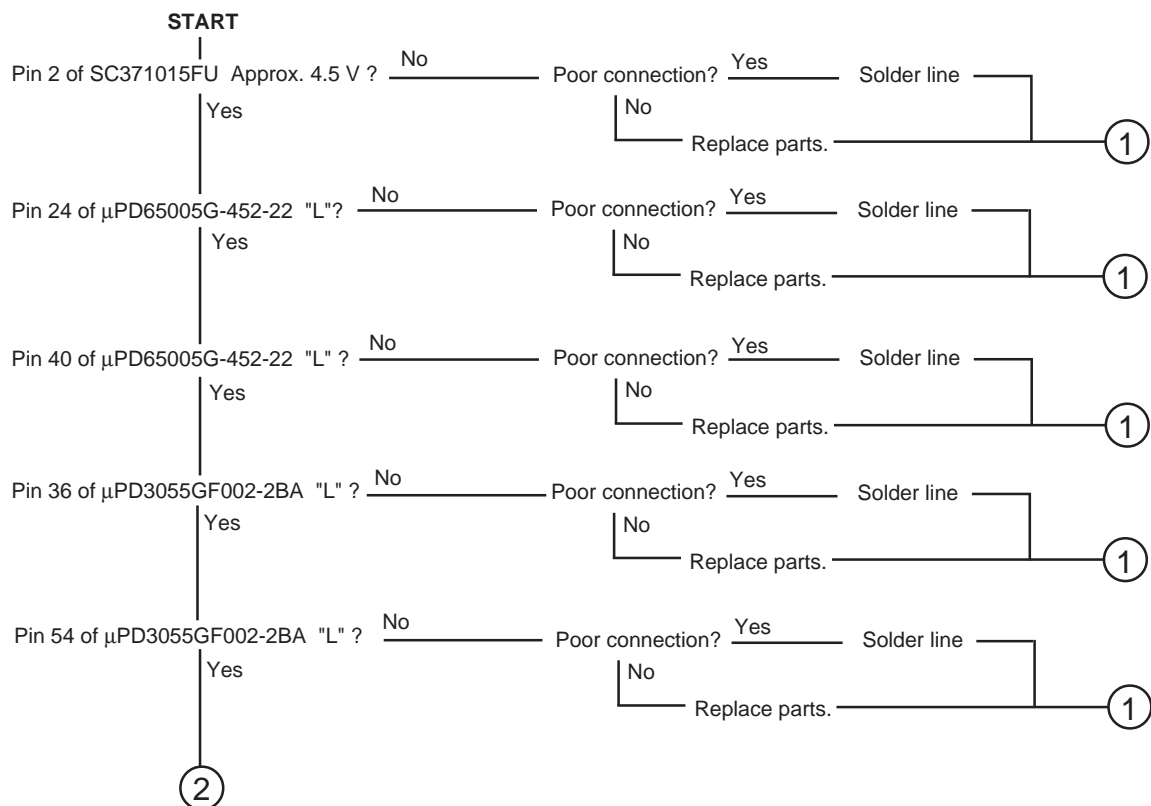
- 1) When power is off after presetting a alarm time, automatically power is on at a alarm time. However, the display is not reserved in this case.
- 2) When executing memory sum check, before execute the RAM write check (with TEL button).
- 3) To release diagnostic mode, press reset button.
- 4) The display contrast can be changed by the contrast volume.

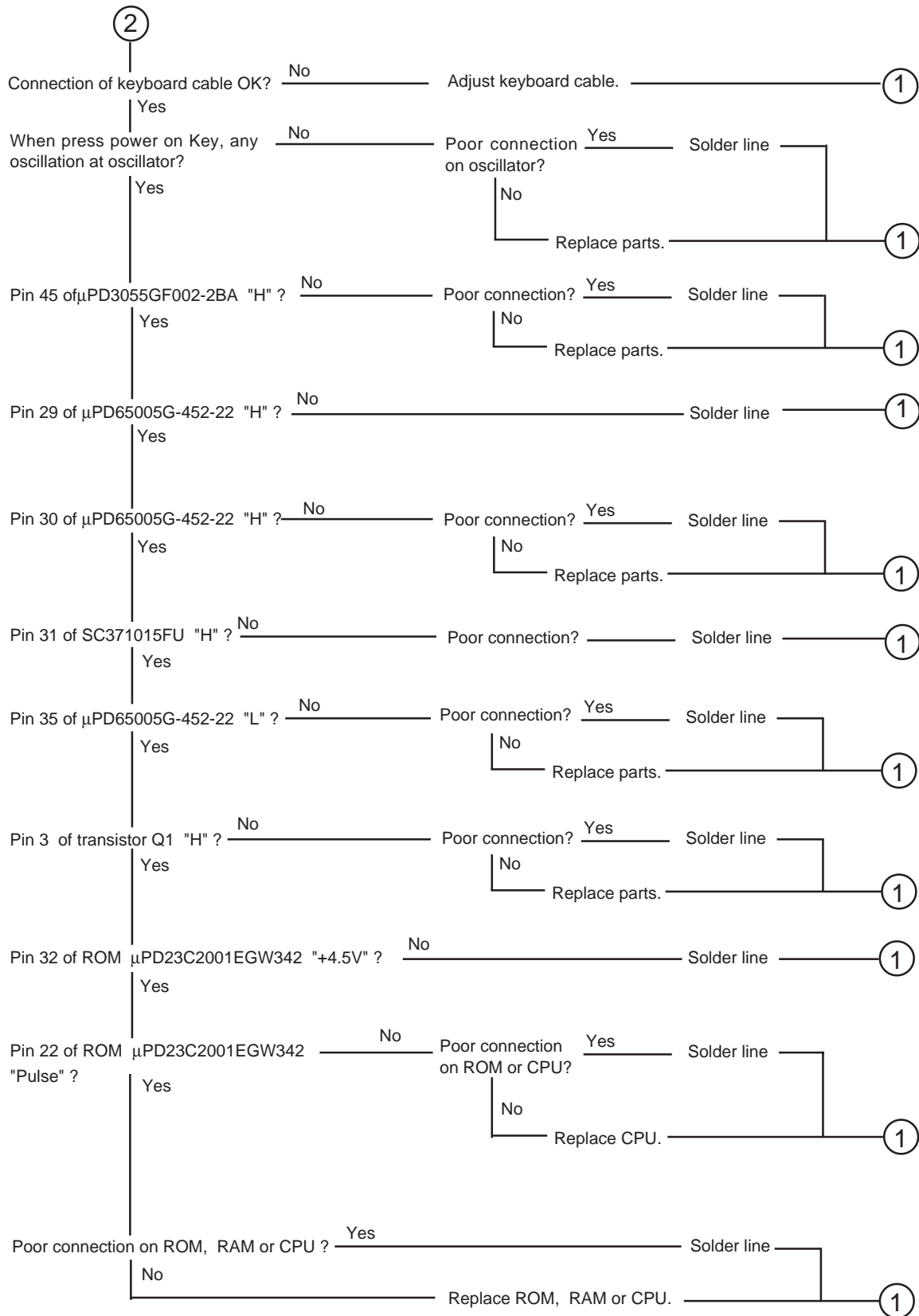
12. TROUBLESHOOTING

Generally, check the machine with the following steps for repair.

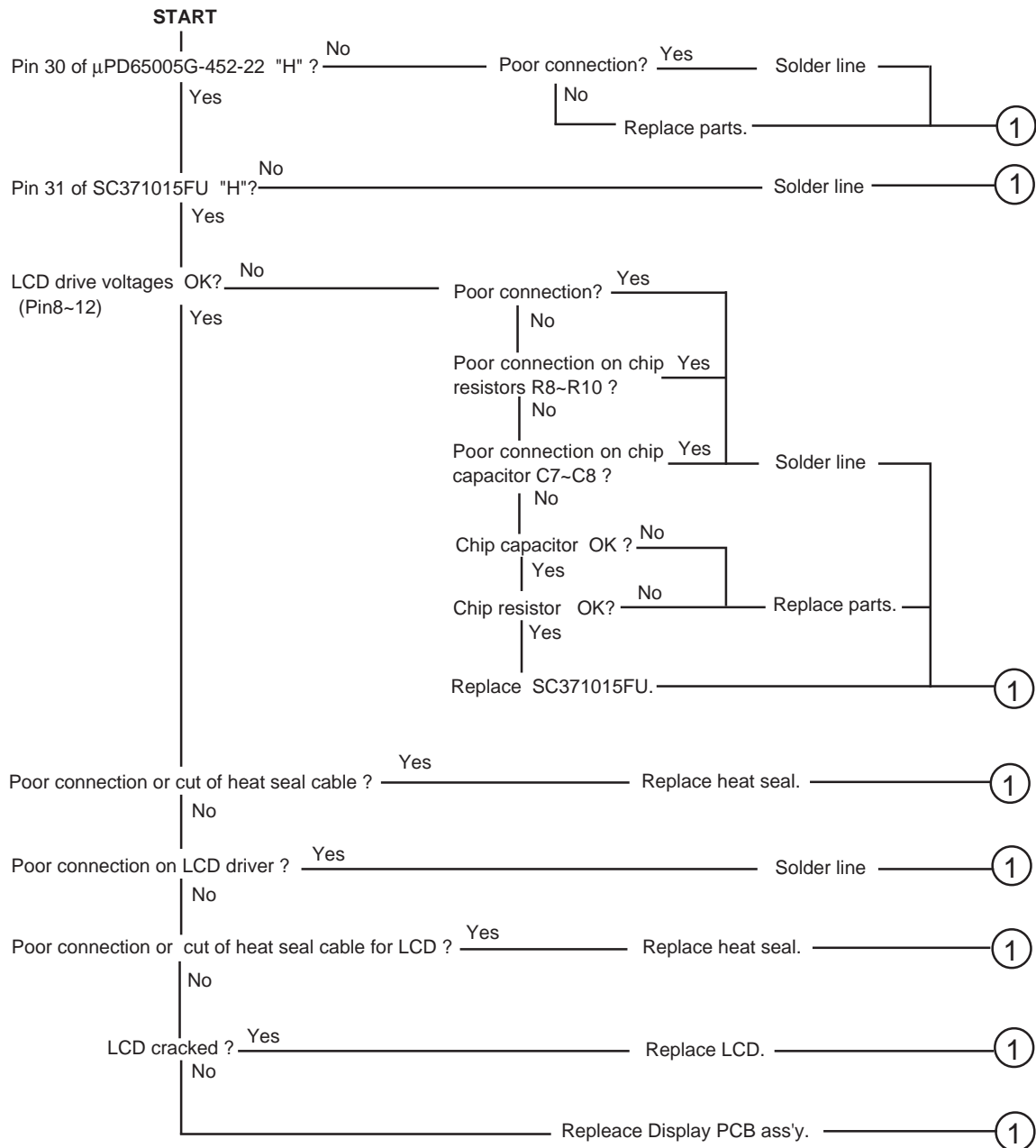


Repair section 1 : For no key input problem

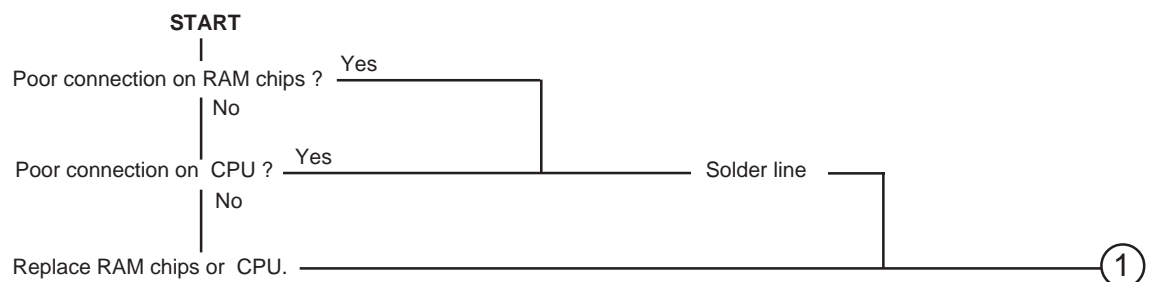




Repair section 2 : For no display or wrong display problem



Repair section 3 : For memory problem



13. PARTS LIST (SF-8350R)

| N | Item | Code No. | Parts Name | Specification | Q | M | FOB Japan N.R.Yen Unit Price | R |
|-------------------------------|---------------------------|-----------|---|---------------------|---|----|------------------------------------|---|
| 1. CPU BOARD ASS'Y | | | | | | | | |
| N | LSI7 | 2011 7112 | LSI (ROM) | μPD23C2001EGW342 | 1 | 1 | 670 | A |
| | LSI8 | 2011 2849 | LSI (RAM) | μPD43256AGU-10,12LL | 1 | 1 | 600 | A |
| | LSI6 | 2011 2849 | LSI (RAM) | μPD43256AGU-10,12LL | 1 | 1 | 600 | A |
| | LSI4 | 2010 8113 | LSI | HD62063B01 | 1 | 1 | 510 | A |
| | LSI3 | 2011 1645 | LSI | μPD65005G-452-22 | 1 | 1 | 230 | A |
| | LSI2 | 2105 2436 | LSI | SC371015FU | 1 | 1 | 540 | A |
| | LSI1 | 2011 0098 | LSI | μPD3055GF002-2BA | 1 | 1 | 870 | A |
| | X1 | 2590 0777 | Ceramic oscillator | CSAC2.01MGCM001-TC | 1 | 1 | 98 | B |
| | Q3 | 2259 0959 | Chip digital transistor | DTC114YKT-14671K | 1 | 20 | 12 | C |
| | Q1 | 2250 0413 | Chip transistor | 2SA1141-T1B(M6) | 1 | 20 | 24 | C |
| | D1 | 2390 1197 | Diode | MA743-(TX) | 1 | 10 | 36 | C |
| | D2 | 2390 0364 | Diode | MA713-TX | 1 | 10 | 33 | C |
| | C13 | 2895 1204 | Chip tantalum capacitor | ECST0J106R | 1 | 20 | 29 | C |
| | C9 | 2895 1190 | Chip tantalum capacitor | ECST1AX106R | 1 | 10 | 39 | C |
| | C7,C8 | 2895 1197 | Chip tantalum capacitor | ECST1AY335R | 2 | 20 | 29 | C |
| | C12 | 2845 1925 | Chip capacitor | MCH312F105ZP | 1 | 20 | 21 | C |
| | C19 | 2895 1365 | Chip capacitor | MCH325F474ZP | 1 | 20 | 27 | C |
| | C5,C6,C15, C18,C22,C23 | 2845 1540 | Chip capacitor | MCH212F104ZK | 6 | 20 | 4 | C |
| | C21 | 2845 1540 | Chip capacitor | MCH212F104ZK | 1 | 20 | 4 | C |
| | C10 | 2845 2030 | Chip capacitor | MCH215C102KK | 1 | 20 | 3 | C |
| | C1 | 2845 2289 | Chip capacitor | MCH215C471KK | 1 | 20 | 3 | C |
| | C2 | 2845 2968 | Chip capacitor | MCH215C221KK | 1 | 20 | 3 | C |
| | C3,C4 | 2845 2499 | Chip capacitor | MCH215A300JK | 2 | 20 | 3 | C |
| | C16,C17 | 2845 1652 | Chip capacitor | MCH215A180JK | 2 | 20 | 3 | C |
| | R1,R28 | 2795 3346 | Chip resistor | MCR03EZJH105 | 2 | 20 | 2 | C |
| | R19 | 2795 4214 | Chip resistor | MCR03EZHG304 | 1 | 20 | 4 | C |
| | R5 | 2795 3367 | Chip resistor | MCR03EZJH224 | 1 | 20 | 2 | C |
| | R4 | 2795 3374 | Chip resistor | MCR03EZJH154 | 1 | 20 | 2 | C |
| | R17 | 2795 3017 | Chip resistor | MCR03EZJH104 | 1 | 20 | 2 | C |
| | R15 | 2795 3003 | Chip resistor | MCR03EZJH473 | 1 | 20 | 2 | C |
| | R25 | 6511 7460 | Chip resistor | CC4702310C1 | 1 | 20 | 9 | C |
| | R2 | 2795 3101 | Chip resistor | MCR03EZHG363 | 1 | 20 | 4 | C |
| | R14 | 2795 2947 | Chip resistor | MCR03EZJH182 | 1 | 20 | 2 | C |
| | R13 | 2795 2940 | Chip resistor | MCR03EZJH102 | 1 | 20 | 2 | C |
| | R6,R23,R24 | 2795 2926 | Chip resistor | MCR03EZJH101 | 3 | 20 | 2 | C |
| | R3,R8, R9,R26 | 2795 3360 | Chip resistor | MCR03EZJH000 | 4 | 20 | 2 | C |
| | R16 | 2795 3360 | Chip resistor | MCR03EZJH000 | 1 | 20 | 2 | C |
| | R22 | 2795 3360 | Chip resistor | MCR03EZJH000 | 1 | 20 | 2 | C |
| | J1 | 3501 6538 | Miniature jack | HSJ1169-012010 | 1 | 5 | 56 | X |
| | X2 | 7110 0642 | Crystal oscillator | DT-26S | 1 | 10 | 57 | B |
| | R7 | 2765 1001 | Volume | RK09G-J11TS-100KB | 1 | 5 | 83 | C |
| N | 1 | 6409 4540 | CPU board assembly (Consists of the above parts) | DB04CX3101M | 1 | 1 | 5,470 | A |
| | 2 | 6511 7420 | Heat seal | FX201P20172 | 1 | 5 | 78 | A |
| | 3 | 6512 3150 | Insulation seal | HGFC0007905 | 2 | 10 | 30 | X |
| 2. DISPLAY BOARD ASS'Y | | | | | | | | |
| | | 2011 1974 | LSI | MSM6385AV-Z358B | 3 | 1 | 370 | A |
| | 4 | 3335 3612 | LCD | CD401A-TS | 1 | 1 | 840 | A |
| | 5 | 6511 7710 | Heat seal | FX200P40013 | 1 | 1 | 170 | A |

Notes: N – New parts

M – Minimum order/supply quantity

R – Rank

Q – Quantity used per unit

R – A : Essential

B : Stock recommended

C : Others

X : No stock recommended

| N | Item | Code No. | Parts Name | Specification | Q | M | FOB Japan N.R.Yen Unit Price | R |
|----------------------|------|-----------|--|------------------|---|----|------------------------------------|---|
| | 6 | 6511 9030 | Cushion (A) | FH100024206 | 2 | 20 | 20 | X |
| | 7 | 6406 7530 | D/D PCB ass'y (572) | APDB04XX04S(B)*1 | 1 | 1 | 2,800 | A |
| 3. UPPER CASE | | | | | | | | |
| N | 8 | 6511 9000 | Upper case A (DISPLAY) | FAADB040021 | 1 | 5 | 78 | X |
| | 9 | 6512 3160 | Upper case B (KEYBOARD) | FAADB040039 | 1 | 5 | 77 | X |
| | 10 | 6511 7340 | Hinge A | FC002800001 | 1 | 20 | 26 | X |
| | 11 | 6511 7130 | Hinge B | FC002800109 | 1 | 20 | 26 | X |
| | 12 | 6511 7350 | Shaft L | FC000510014 | 2 | 20 | 19 | X |
| | 13 | 6511 7360 | Shaft | FC000510022 | 2 | 20 | 10 | X |
| | 14 | 6409 4500 | Display plate | EL5G0010105 | 1 | 1 | 210 | C |
| | 15 | 6406 7470 | Upper sheet (DISPLAY) | EL5F0005104 | 1 | 5 | 53 | X |
| | 16 | 6511 7120 | Upper sheet (KEYBOARD) | EL50026F102 | 1 | 1 | 220 | X |
| | 17 | 6511 8870 | LCD tape | HGFC0006101 | 1 | 1 | 110 | X |
| | 18 | 6511 7140 | Key contact rubber (DISPLAY) | LADB0420007 | 1 | 10 | 49 | B |
| | 19 | 6511 7150 | Key contact rubber (KEYBOARD) | LADB0410001 | 1 | 1 | 130 | B |
| | 20 | 6511 8400 | Key contact rubber (RESET) | LADB0220105 | 1 | 20 | 10 | B |
| | 21 | 6406 7480 | Key top set (DISPLAY) | KGDB0410030 | 1 | 5 | 76 | C |
| | 22 | 6511 7260 | Key top set (KEYBOARD) | KGDB0410013 | 1 | 1 | 140 | C |
| 4. LOWER CASE | | | | | | | | |
| N | 23 | 6409 4520 | Lower case A (KEYBOARD) | FABDB041007 | 1 | 1 | 110 | X |
| N | 24 | 6409 4490 | Lower case B (DISPLAY) | FABDB042003 | 1 | 1 | 130 | X |
| | 25 | 6402 4700 | Nut | MD100000505 | 2 | 20 | 5 | X |
| | 26 | 6511 7380 | Battery spring (+) | EF01DB04000 | 3 | 20 | 12 | C |
| | 27 | 6511 7390 | Battery spring (-) | EF02DB04002 | 3 | 20 | 23 | C |
| | 28 | 6402 4590 | Nut tape | HGFC0002601 | 2 | 20 | 3 | X |
| | 29 | 6510 4420 | Battery insulation label | HGFC0001109 | 3 | 20 | 3 | X |
| | 30 | 6511 7770 | Battery cover label | HGFC0004400 | 1 | 20 | 23 | X |
| | 31 | 6511 7780 | Battery cover | FADDB040007 | 1 | 1 | 80 | C |
| | 32 | 6511 7180 | Battery holder S (for memory back up battery) | ECDB0411111 | 1 | 20 | 30 | X |
| | 33 | 6510 4310 | Screw (for battery holder (s)) | MAA80006311 | 1 | 20 | 3 | B |
| | 34 | 6511 8930 | Screw (for hinge) | MAB10033307 | 2 | 20 | 3 | B |
| | 35 | 6511 7210 | Screw | MAB10023301 | 8 | 20 | 3 | B |
| | 36 | 6511 7220 | Screw | MAB10013209 | 5 | 20 | 3 | B |
| | 37 | 6511 8410 | Screw | MAB10015201 | 2 | 20 | 3 | B |
| | 38 | 6511 7240 | Screw | MAA20092300 | 1 | 20 | 3 | B |
| | 39 | 6510 5250 | Screw | MAB80004209 | 2 | 20 | 3 | B |
| N | 40 | 6409 4510 | Blind seal | HGFC0004515 | 1 | 20 | 3 | X |
| | 41 | 6511 7190 | Battery holder L | ECDB0411102 | 1 | 10 | 42 | X |
| 5. OTHERS | | | | | | | | |
| | 42 | 6408 5920 | Switch knob ass'y | DB2AXX4A00M | 1 | 10 | 30 | C |
| | 43 | 6512 3120 | Buzzer | CK234P50105 | 1 | 1 | 170 | X |
| | 44 | 6510 4500 | Buzzer tape | HGFC0000501 | 1 | 20 | 17 | X |
| | 45 | 6511 7080 | Knob | FB3DB040008 | 1 | 20 | 9 | C |
| | 46 | 6390 0430 | Cap V332 | A310765-1 | 1 | 20 | 11 | C |
| | 47 | 6511 7290 | Battery change label A | HGFC0004604 | 1 | 20 | 14 | C |
| | 48 | 6511 7300 | Battery change label B | HGFC0004701 | 1 | 20 | 7 | C |
| | 49 | 6511 7270 | Insulation sheet | ELBDB041106 | 1 | 20 | 21 | X |
| | 50 | 6406 7490 | Hinge blind plate | HGFC0008901 | 1 | 20 | 21 | C |

Notes: N – New parts

M – Minimum order/supply quantity

R – Rank

Q – Quantity used per unit

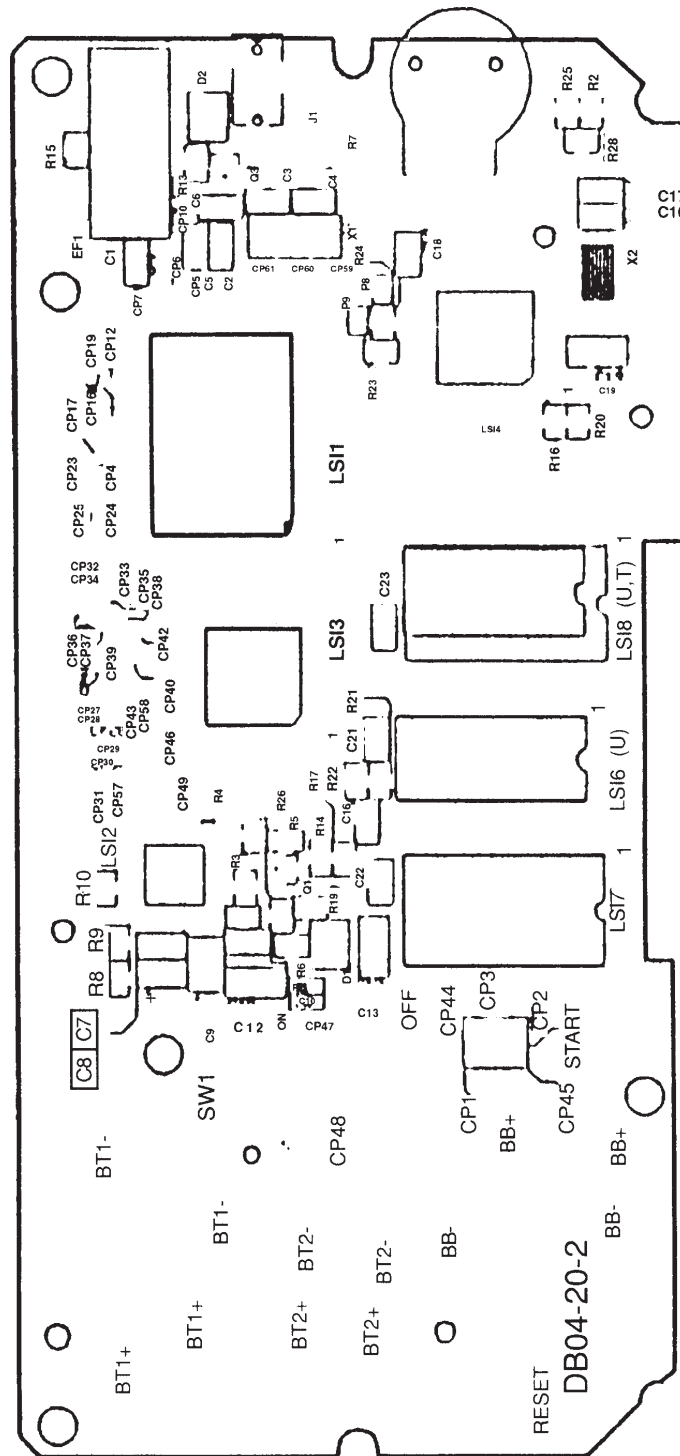
R – A : Essential

B : Stock recommended

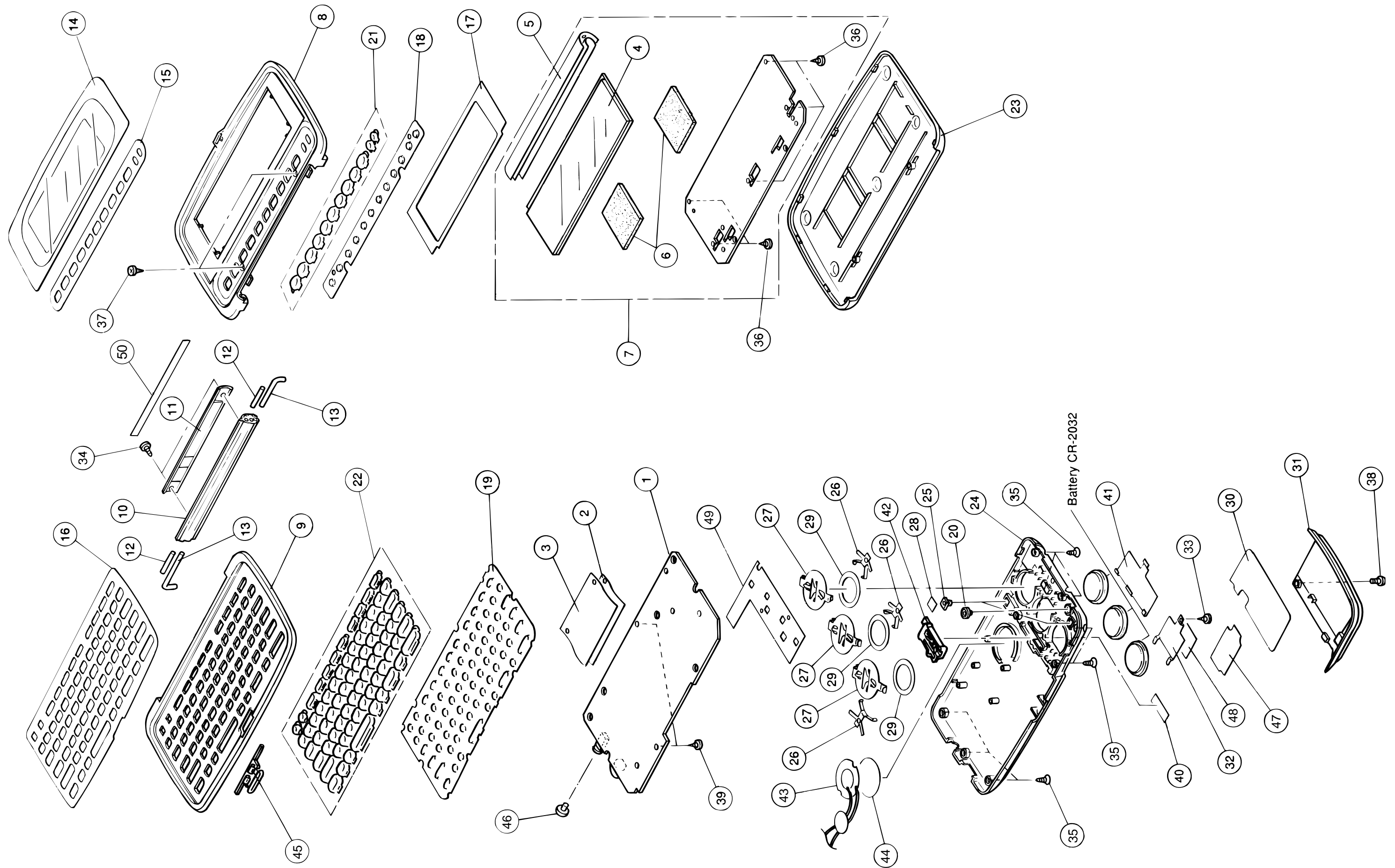
C : Others

X : No stock recommended

14. PCB VIEW (SF-8350R)



15. ASSEMBLY VIEW (SF-8350R)



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